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Environmental Impact Report/ Environmental Impact Statement

Southern California Edison's

West of Devers Upgrade Project

SCH #2014051041

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VOLUME 3

Appendices

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Appendix 1. Project Description Information

Appendix 1

Project Description Information

Appendix 1A – Structure Height Tables

Appendix 1B – FAA Hazard Marking Evaluations

Appendix 1C – Construction Equipment and Workforce Estimates

Appendix 1A

Structure Height Tables

Table Ap.1A-1. Structure Heights – Segment 1

Structure No.	Circuit 1	Circuit 2	Status	Type	Height (feet)
San Bdno Sub	Etiwanda-San Bernardino	n/a	Existing	Rack	85
San Bdno Sub	El Casco-San Bernardino	n/a	Existing	Rack	65
San Bdno Sub	San Bernardino-Vista	n/a	Existing	Rack	65
San Bdno Sub	Devers-San Bernardino	n/a	Existing	Rack	65
1W26	San Bernardino-Vista	Etiwanda-San Bernardino	Proposed	LST	140
1W25	San Bernardino-Vista	Etiwanda-San Bernardino	Proposed	LST	140
1W24	San Bernardino-Vista	Etiwanda-San Bernardino	Proposed	LST	124
1W23	San Bernardino-Vista	Etiwanda-San Bernardino	Proposed	LST	133
1W22	San Bernardino-Vista	Etiwanda-San Bernardino	Proposed	LST	130
1W21	San Bernardino-Vista	Etiwanda-San Bernardino	Proposed	LST	149
1W20	San Bernardino-Vista	Etiwanda-San Bernardino	Proposed	LST	155
1W19	San Bernardino-Vista	Etiwanda-San Bernardino	Proposed	LST	145
1W18	San Bernardino-Vista	Etiwanda-San Bernardino	Proposed	LST	145
1W17	San Bernardino-Vista	Etiwanda-San Bernardino	Proposed	LST	127
1W16	San Bernardino-Vista	Etiwanda-San Bernardino	Proposed	LST	127
1W15	San Bernardino-Vista	Etiwanda-San Bernardino	Proposed	LST	113
1W14	San Bernardino-Vista	Etiwanda-San Bernardino	Proposed	LST	118
1W13	San Bernardino-Vista	Etiwanda-San Bernardino	Proposed	LST	119
1W12	San Bernardino-Vista	Etiwanda-San Bernardino	Proposed	LST	149
1W11	San Bernardino-Vista	Etiwanda-San Bernardino	Proposed	LST	149
1W10	San Bernardino-Vista	Etiwanda-San Bernardino	Proposed	LST	170
1W09	San Bernardino-Vista	Etiwanda-San Bernardino	Proposed	LST	185
1W08	San Bernardino-Vista	Etiwanda-San Bernardino	Proposed	LST	136
1W06	San Bernardino-Vista	Etiwanda-San Bernardino	Proposed	LST	139
1W05	San Bernardino-Vista	Etiwanda-San Bernardino	Proposed	LST	139
1W04	San Bernardino-Vista	Etiwanda-San Bernardino	Proposed	LST	179
1W03	San Bernardino-Vista	Etiwanda-San Bernardino	Proposed	LST	128
1W01	San Bernardino-Vista	Etiwanda-San Bernardino	Proposed	TSP	105
1W00	San Bernardino-Vista	Etiwanda-San Bernardino	Modify	LST	140
1E28	El Casco-San Bernardino	Devers-San Bernardino	Proposed	TSP	134
1E27	El Casco-San Bernardino	Devers-San Bernardino	Proposed	TSP	134
1E26	El Casco-San Bernardino	Devers-San Bernardino	Proposed	LST	149
1E25	El Casco-San Bernardino	Devers-San Bernardino	Proposed	LST	140
1E24	El Casco-San Bernardino	Devers-San Bernardino	Proposed	LST	130
1E23	El Casco-San Bernardino	Devers-San Bernardino	Proposed	LST	133
1E22	El Casco-San Bernardino	Devers-San Bernardino	Proposed	LST	130
1E21	El Casco-San Bernardino	Devers-San Bernardino	Proposed	LST	149

Table Ap.1A-1. Structure Heights – Segment 1

Structure No.	Circuit 1	Circuit 2	Status	Type	Height (feet)
1E20	El Casco-San Bernardino	Devers-San Bernardino	Proposed	LST	155
1E19	El Casco-San Bernardino	Devers-San Bernardino	Proposed	LST	151
1E18	El Casco-San Bernardino	Devers-San Bernardino	Proposed	LST	148
1E17	El Casco-San Bernardino	Devers-San Bernardino	Proposed	LST	130
1E16	El Casco-San Bernardino	Devers-San Bernardino	Proposed	LST	127
1E15	El Casco-San Bernardino	Devers-San Bernardino	Proposed	LST	113
1E14	El Casco-San Bernardino	Devers-San Bernardino	Proposed	LST	118
1E13	El Casco-San Bernardino	Devers-San Bernardino	Proposed	LST	116
1E12	El Casco-San Bernardino	Devers-San Bernardino	Proposed	LST	122
1E11	El Casco-San Bernardino	Devers-San Bernardino	Proposed	LST	146
1E10	El Casco-San Bernardino	Devers-San Bernardino	Proposed	LST	170
1E09	El Casco-San Bernardino	Devers-San Bernardino	Proposed	LST	160
1E08	El Casco-San Bernardino	Devers-San Bernardino	Proposed	LST	133
1E06	El Casco-San Bernardino	Devers-San Bernardino	Proposed	LST	136
1E05	El Casco-San Bernardino	Devers-San Bernardino	Proposed	LST	138
1E04	El Casco-San Bernardino	Devers-San Bernardino	Proposed	LST	177
1E03	El Casco-San Bernardino	Devers-San Bernardino	Proposed	LST	116
M3-T2	Devers-San Bernardino No.1	Etiwanda-San Bernardino	Remove	LST	128
M3-T1	Devers-San Bernardino No.1	Etiwanda-San Bernardino	Remove	LST	123
M2-T5	Devers-San Bernardino No.1	Etiwanda-San Bernardino	Remove	LST	118
M2-T4	Devers-San Bernardino No.1	Etiwanda-San Bernardino	Remove	LST	155
M2-T3	Devers-San Bernardino No.1	Etiwanda-San Bernardino	Remove	LST	148
M2-T2	Devers-San Bernardino No.1	Etiwanda-San Bernardino	Remove	LST	147
M2-T1	Devers-San Bernardino No.1	Etiwanda-San Bernardino	Remove	LST	153
M1-T7	Devers-San Bernardino No.1	Etiwanda-San Bernardino	Remove	LST	131
M1-T6	Devers-San Bernardino No.1	Etiwanda-San Bernardino	Remove	LST	131
M1-T5	Devers-San Bernardino No.1	Etiwanda-San Bernardino	Remove	LST	133
M1-T4	Devers-San Bernardino No.1	Etiwanda-San Bernardino	Remove	LST	122
M1-T3	Devers-San Bernardino No.1	Etiwanda-San Bernardino	Remove	LST	124
M1-T2	Devers-San Bernardino No.1	Etiwanda-San Bernardino	Remove	LST	124
M1-T1	Devers-San Bernardino No.1	Etiwanda-San Bernardino	Remove	LST	139
M0-T8	Devers-San Bernardino No.1	Etiwanda-San Bernardino	Remove	LST	131
M0-T7	Devers-San Bernardino No.1	Etiwanda-San Bernardino	Remove	LST	147
M0-T6	Devers-San Bernardino No.1	Etiwanda-San Bernardino	Remove	LST	139
M0-T5	Devers-San Bernardino No.1	Etiwanda-San Bernardino	Remove	LST	138
M0-T4	Devers-San Bernardino No.1	Etiwanda-San Bernardino	Remove	LST	126
M0-T3	Devers-San Bernardino No.1	Etiwanda-San Bernardino	Remove	LST	127
M0-T2	Devers-San Bernardino No.1	Etiwanda-San Bernardino	Remove	LST	132
M0-T1	Devers-San Bernardino No.1	Etiwanda-San Bernardino	Remove	LST	171
M39-T3	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	165

Table Ap.1A-1. Structure Heights – Segment 1

Structure No.	Circuit 1	Circuit 2	Status	Type	Height (feet)
M3-T1(2)	El Casco-San Bernardino	San Bernardino-Vista	Remove	LST	148
M2-T5	El Casco-San Bernardino	San Bernardino-Vista	Remove	LST	119
M2-T4(2)	El Casco-San Bernardino	San Bernardino-Vista	Remove	LST	155
M2-T3(2)	El Casco-San Bernardino	San Bernardino-Vista	Remove	LST	148
M2-T2(2)	El Casco-San Bernardino	San Bernardino-Vista	Remove	LST	148
M2-T1(2)	El Casco-San Bernardino	San Bernardino-Vista	Remove	LST	155
M1-T7	El Casco-San Bernardino	San Bernardino-Vista	Remove	LST	131
M1-T6	El Casco-San Bernardino	San Bernardino-Vista	Remove	LST	132
M1-T5	El Casco-San Bernardino	San Bernardino-Vista	Remove	LST	131
M1-T4(2)	El Casco-San Bernardino	San Bernardino-Vista	Remove	LST	117
M1-T3(2)	El Casco-San Bernardino	San Bernardino-Vista	Remove	LST	124
M1-T2(2)	El Casco-San Bernardino	San Bernardino-Vista	Remove	LST	124
M1-T1(2)	El Casco-San Bernardino	San Bernardino-Vista	Remove	LST	138
M0-T8	El Casco-San Bernardino	San Bernardino-Vista	Remove	LST	131
M0-T7	El Casco-San Bernardino	San Bernardino-Vista	Remove	LST	147
M0-T6	El Casco-San Bernardino	San Bernardino-Vista	Remove	LST	138
M0-T5(2)	El Casco-San Bernardino	San Bernardino-Vista	Remove	LST	139
M0-T4(2)	El Casco-San Bernardino	San Bernardino-Vista	Remove	LST	131
M0-T3(2)	El Casco-San Bernardino	San Bernardino-Vista	Remove	LST	127
M0-T2(2)	El Casco-San Bernardino	San Bernardino-Vista	Remove	LST	132
M0-T1(2)	El Casco-San Bernardino	San Bernardino-Vista	Remove	LST	171
M3-T2(3)	San Bernardino-Vista	n/a	Remove	LST	128

Table Ap.1A-2. Structure Heights – Segment 2

Structure No.	Circuit 1	Circuit 2	Status	Type	Height (feet)
Vista Sub	San Bernardino-Vista	n/a	Existing	Rack	65
Vista Sub	Devers-Vista No.1	n/a	Existing	Rack	65
Vista Sub	Devers-Vista No.2	n/a	Existing	Rack	65
2N38	Devers-Vista No.2	n/a	Proposed	TSP	160
2N37	Devers-Vista No.1	n/a	Proposed	TSP	160
2N36	Devers-Vista No.1	Devers-Vista No.2	Proposed	TSP	147
2N35	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	152
2N34	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	175
2N33	Devers-Vista No.1	Devers-Vista No.2	Modify	LST	157
2N32	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	157
2N31	Devers-Vista No.1	Devers-Vista No.2	Modify	LST	145
2N30	Devers-Vista No.1	Devers-Vista No.2	Modify	LST	131
2N29	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	157
2N28	Devers-Vista No.1	Devers-Vista No.2	Modify	LST	155
2N26	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	162
2N25	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	154
2N23	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	156
2N22	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	134
2N21	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	172
2N20	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	180
2N18	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	170
2N17	Devers-Vista No.1	Devers-Vista No.2	Proposed	TSP	155
2N16	Devers-Vista No.1	Devers-Vista No.2	Proposed	TSP	137
2N15	Devers-Vista No.1	Devers-Vista No.2	Proposed	TSP	150
2N14	Devers-Vista No.1	Devers-Vista No.2	Proposed	TSP	111
2N12	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	134
2N11	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	136
2N10	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	160
2N08	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	118
2N07	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	145
2N06	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	170
2N04	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	154
2N03	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	170
2N02	Devers-Vista No.1	Devers-Vista No.2	Proposed	TSP	170
2N01	Devers-Vista No.1	Devers-Vista No.2	Proposed	TSP	180
M44-T8	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	141
M44-T7	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	141
M44-T6	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	141
M44-T5	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	138
M44-T3	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	149

Table Ap.1A-2. Structure Heights – Segment 2

Structure No.	Circuit 1	Circuit 2	Status	Type	Height (feet)
M43-T6	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	159
M43-T4	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	167
M43-T3	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	124
M43-T2	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	123
M43-T1	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	113
M42-T5	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	154
M42-T4	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	145
M42-T3	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	142
M42-T2	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	123
M42-T1	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	145
M41-T4	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	140
M41-T3	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	151
M41-T2	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	119
M41-T1	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	122
M40-T4	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	120
M40-T3	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	132
M40-T2	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	112
M40-T1	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	145
M39-T4	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	175
M5-T1(2)	El Casco-San Bernardino	n/a	Remove	LST	141
M4-T3(2)	San Bernardino-Vista	Etiwanda-San Bernardino	Existing	LST	133
M4-T2(2)	San Bernardino-Vista	Etiwanda-San Bernardino	Existing	LST	131
M4-T1(2)	San Bernardino-Vista	Etiwanda-San Bernardino	Existing	LST	123
M3-T5	San Bernardino-Vista	Etiwanda-San Bernardino	Existing	LST	139
M3-T4(2)	San Bernardino-Vista	Etiwanda-San Bernardino	Existing	LST	116
M3-T3(2)	San Bernardino-Vista	Etiwanda-San Bernardino	Existing	LST	121
M3-T2(2)	San Bernardino-Vista	Etiwanda-San Bernardino	Existing	LST	120
M2-T5(2)	San Bernardino-Vista	Etiwanda-San Bernardino	Existing	LST	117
M2-T3(1)	San Bernardino-Vista	Etiwanda-San Bernardino	Existing	LST	134
M2-T2(2)	San Bernardino-Vista	Etiwanda-San Bernardino	Existing	LST	115
M2-T1(2)	San Bernardino-Vista	Etiwanda-San Bernardino	Existing	LST	180
M1-T4(2)	San Bernardino-Vista	Etiwanda-San Bernardino	Existing	LST	115
M1-T3(2)	San Bernardino-Vista	Etiwanda-San Bernardino	Existing	LST	118
M1-T2(2)	San Bernardino-Vista	Etiwanda-San Bernardino	Existing	LST	135
M1-T1(2)	San Bernardino-Vista	Etiwanda-San Bernardino	Existing	LST	133
M0-T6(1)	San Bernardino-Vista	Etiwanda-San Bernardino	Existing	LST	141
M0-T5(1)	San Bernardino-Vista	Etiwanda-San Bernardino	Existing	LST	133
M0-T4(2)	San Bernardino-Vista	Etiwanda-San Bernardino	Existing	LST	133
M0-T3(2)	San Bernardino-Vista	Etiwanda-San Bernardino	Existing	LST	134
M0-T2(2)	San Bernardino-Vista	Etiwanda-San Bernardino	Existing	LST	136

Table Ap.1A-2. Structure Heights – Segment 2

Structure No.	Circuit 1	Circuit 2	Status	Type	Height (feet)
M0-T1(2)	San Bernardino-Vista	Etiwanda-San Bernardino	Existing	LST	139

Table Ap.1A-3. Structure Heights – Segment 3

Structure No.	Circuit 1	Circuit 2	Status	Type	Height (feet)
El Casco Sub	El Casco-San Bernardino	n/a	Existing	Rack	60
3S65	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	182
3S64	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	185
3S63	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	115
3S62	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	160
3S61	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	175
3S60	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	151
3S59	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	162
3S57	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	160
3S56	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	118
3S55	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	125
3S54	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	157
3S53	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	145
3S51	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	185
3S50	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	160
3S48	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	115
3S46	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	118
3S44	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	175
3S43	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	118
3S42	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	118
3S41	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	184
3S40	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	130
3S39	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	122
3S38	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	118
3S37	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	130
3S36	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	185
3S35	Devers-Vista No.1	Devers-Vista No.2	Proposed	TSP	120
3S33	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	185
3S32	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	118
3S31	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	118
3S29	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	185
3S28	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	151
3S27	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	139
3S26	Devers-Vista No.1	Devers-Vista No.2	Proposed	TSP	135
3S25	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	121
3S24	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	157
3S23	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	154
3S22	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	182
3S21	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	160

Table Ap.1A-3. Structure Heights – Segment 3

Structure No.	Circuit 1	Circuit 2	Status	Type	Height (feet)
3S20	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	124
3S19	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	118
3S17	Devers-Vista No.1	Devers-Vista No.2	Proposed	TSP	162
3S16	Devers-Vista No.1	Devers-Vista No.2	Proposed	TSP	150
3S15	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	185
3S14	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	142
3S13	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	175
3S12	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	127
3S10	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	185
3S08	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	154
3S07	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	182
3S06	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	182
3S04	Devers-Vista No.1	Devers-Vista No.2	Modify	LST	182
3S03	Devers-Vista No.1	Devers-Vista No.2	Proposed	TSP	160
3S02	Devers-Vista No.1	Devers-Vista No.2	Proposed	TSP	125
3S01	Devers-Vista No.1	Devers-Vista No.2	Modify	LST	175
3N65	Devers-San Bernardino	El Casco-San Bernardino	Proposed	LST	140
3N64	Devers-San Bernardino	El Casco-San Bernardino	Proposed	LST	162
3N63	Devers-San Bernardino	El Casco-San Bernardino	Proposed	LST	118
3N62	Devers-San Bernardino	El Casco-San Bernardino	Proposed	LST	151
3N61	Devers-San Bernardino	El Casco-San Bernardino	Proposed	LST	160
3N60	Devers-San Bernardino	El Casco-San Bernardino	Proposed	LST	157
3N59	Devers-San Bernardino	El Casco-San Bernardino	Proposed	LST	162
3N57	Devers-San Bernardino	El Casco-San Bernardino	Proposed	LST	160
3N56	Devers-San Bernardino	El Casco-San Bernardino	Proposed	LST	121
3N55	Devers-San Bernardino	El Casco-San Bernardino	Proposed	LST	131
3N54	Devers-San Bernardino	El Casco-San Bernardino	Proposed	LST	175
3N53	Devers-San Bernardino	El Casco-San Bernardino	Proposed	LST	136
3N51	Devers-San Bernardino	El Casco-San Bernardino	Proposed	LST	185
3N50	Devers-San Bernardino	El Casco-San Bernardino	Proposed	LST	165
3N48	Devers-San Bernardino	El Casco-San Bernardino	Proposed	LST	115
3N46	Devers-San Bernardino	El Casco-San Bernardino	Proposed	LST	124
3N44	Devers-San Bernardino	El Casco-San Bernardino	Proposed	LST	160
3N43	Devers-San Bernardino	El Casco-San Bernardino	Proposed	LST	124
3N42	Devers-San Bernardino	El Casco-San Bernardino	Proposed	LST	118
3N41	Devers-San Bernardino	El Casco-San Bernardino	Proposed	LST	182
3N40	Devers-San Bernardino	El Casco-San Bernardino	Proposed	LST	130
3N39	Devers-San Bernardino	El Casco-San Bernardino	Proposed	LST	134
3N38	Devers-San Bernardino	El Casco-San Bernardino	Proposed	LST	118
3N37	Devers-San Bernardino	El Casco-San Bernardino	Proposed	LST	133

Table Ap.1A-3. Structure Heights – Segment 3

Structure No.	Circuit 1	Circuit 2	Status	Type	Height (feet)
3N36	Devers-San Bernardino	El Casco-San Bernardino	Proposed	LST	185
3N35	Devers-San Bernardino	El Casco-San Bernardino	Proposed	TSP	120
3N33	Devers-San Bernardino	El Casco-San Bernardino	Proposed	LST	175
3N32	Devers-San Bernardino	El Casco-San Bernardino	Proposed	LST	127
3N31	Devers-San Bernardino	El Casco-San Bernardino	Proposed	LST	118
3N29	Devers-San Bernardino	El Casco-San Bernardino	Proposed	LST	175
3N28	Devers-San Bernardino	El Casco-San Bernardino	Proposed	LST	139
3N27	Devers-San Bernardino	El Casco-San Bernardino	Proposed	LST	139
3N26	Devers-San Bernardino	El Casco-San Bernardino	Proposed	TSP	145
3N25	Devers-San Bernardino	El Casco-San Bernardino	Proposed	LST	133
3N24	Devers-San Bernardino	El Casco-San Bernardino	Proposed	LST	180
3N23	Devers-San Bernardino	El Casco-San Bernardino	Proposed	LST	130
3N22	Devers-San Bernardino	El Casco-San Bernardino	Proposed	LST	172
3N21	Devers-San Bernardino	El Casco-San Bernardino	Proposed	LST	125
3N20	Devers-San Bernardino	El Casco-San Bernardino	Proposed	LST	124
3N19	Devers-San Bernardino	El Casco-San Bernardino	Proposed	LST	118
3N17	Devers-San Bernardino	El Casco-San Bernardino	Proposed	TSP	155
3N16	Devers-San Bernardino	El Casco-San Bernardino	Proposed	TSP	120
3N15	Devers-San Bernardino	El Casco-San Bernardino	Proposed	LST	160
3N14	Devers-San Bernardino	El Casco-San Bernardino	Proposed	LST	148
3N13	Devers-San Bernardino	El Casco-San Bernardino	Proposed	LST	162
3N12	Devers-San Bernardino	El Casco-San Bernardino	Proposed	LST	160
3N10	Devers-San Bernardino	El Casco-San Bernardino	Proposed	LST	160
3N08	Devers-San Bernardino	El Casco-San Bernardino	Proposed	LST	148
3N07	Devers-San Bernardino	El Casco-San Bernardino	Proposed	LST	175
3N06	Devers-San Bernardino	El Casco-San Bernardino	Proposed	LST	113
3N04	Devers-San Bernardino	El Casco-San Bernardino	Proposed	LST	119
3N03	Devers-San Bernardino	El Casco-San Bernardino	Proposed	LST	140
3N02	Devers-San Bernardino	El Casco-San Bernardino	Modify	LST	130
3N01	El Casco-San Bernardino	n/a	Modify	LST	133
PP#123273	El Casco-San Bernardino	n/a	Remove	LST	97
PP#123272	El Casco-San Bernardino	n/a	Remove	LST	85
PP#123271	El Casco-San Bernardino	n/a	Remove	LST	96
PP#123270	El Casco-San Bernardino	n/a	Remove	LST	86
PP#123269	El Casco-San Bernardino	n/a	Remove	LST	86
PP#123268	El Casco-San Bernardino	n/a	Remove	LST	86
PP#123267	El Casco-San Bernardino	n/a	Remove	LST	86
PP#123266	El Casco-San Bernardino	n/a	Remove	LST	85
PP#123265	El Casco-San Bernardino	n/a	Remove	LST	86
PP#123264	El Casco-San Bernardino	n/a	Remove	LST	86

Table Ap.1A-3. Structure Heights – Segment 3

Structure No.	Circuit 1	Circuit 2	Status	Type	Height (feet)
PP#123263	El Casco-San Bernardino	n/a	Remove	LST	86
PP#123262	El Casco-San Bernardino	n/a	Remove	LST	86
PP#123261	El Casco-San Bernardino	n/a	Remove	LST	86
PP#123260	El Casco-San Bernardino	n/a	Remove	LST	96
PP#123259	El Casco-San Bernardino	n/a	Remove	LST	96
PP#123258	El Casco-San Bernardino	n/a	Remove	LST	86
PP#123257	El Casco-San Bernardino	n/a	Remove	LST	85
PP#123256	El Casco-San Bernardino	n/a	Remove	LST	84
PP#123255	El Casco-San Bernardino	n/a	Remove	LST	95
PP#123254	El Casco-San Bernardino	n/a	Remove	LST	86
PP#123253	El Casco-San Bernardino	n/a	Remove	LST	85
PP#123252	El Casco-San Bernardino	n/a	Remove	LST	85
PP#123251	El Casco-San Bernardino	n/a	Remove	LST	95
PP#123250	El Casco-San Bernardino	n/a	Remove	LST	84
PP#123249	El Casco-San Bernardino	n/a	Remove	LST	83
PP#123248	El Casco-San Bernardino	n/a	Remove	LST	84
PP#123247	El Casco-San Bernardino	n/a	Remove	LST	86
PP#123246	El Casco-San Bernardino	n/a	Remove	LST	85
PP#123245	El Casco-San Bernardino	n/a	Remove	LST	86
PP#123244	El Casco-San Bernardino	n/a	Remove	LST	86
PP#123243	El Casco-San Bernardino	n/a	Remove	LST	86
PP#123242	El Casco-San Bernardino	n/a	Remove	LST	86
PP#123241	El Casco-San Bernardino	n/a	Remove	LST	86
PP#123240	El Casco-San Bernardino	n/a	Remove	LST	86
PP#123239	El Casco-San Bernardino	n/a	Remove	LST	87
PP#123238	El Casco-San Bernardino	n/a	Remove	LST	95
PP#123237	El Casco-San Bernardino	n/a	Remove	LST	96
PP#123236	El Casco-San Bernardino	n/a	Remove	LST	96
PP#123235	El Casco-San Bernardino	n/a	Remove	LST	97
PP#123234	El Casco-San Bernardino	n/a	Remove	LST	85
PP#123233	El Casco-San Bernardino	n/a	Remove	LST	85
PP#123232	El Casco-San Bernardino	n/a	Remove	LST	85
PP#123231	El Casco-San Bernardino	n/a	Remove	LST	85
PP#123230	El Casco-San Bernardino	n/a	Remove	LST	86
PP#123229	El Casco-San Bernardino	n/a	Remove	LST	87
PP#123228	El Casco-San Bernardino	n/a	Remove	LST	96
PP#123227	El Casco-San Bernardino	n/a	Remove	LST	86
PP#123226	El Casco-San Bernardino	n/a	Remove	LST	85
PP#123225	El Casco-San Bernardino	n/a	Remove	LST	86
PP#123224	El Casco-San Bernardino	n/a	Remove	LST	85

Table Ap.1A-3. Structure Heights – Segment 3

Structure No.	Circuit 1	Circuit 2	Status	Type	Height (feet)
PP#123223	El Casco-San Bernardino	n/a	Remove	LST	95
M99-T3	Devers-San Bernardino No.1	n/a	Remove	LST	82
M99-T2	Devers-San Bernardino No.1	n/a	Remove	LST	80
M99-T1	Devers-San Bernardino No.1	n/a	Remove	LST	81
M98-T3	Devers-San Bernardino No.1	n/a	Remove	LST	81
M98-T2	Devers-San Bernardino No.1	n/a	Remove	LST	108
M98-T1	Devers-San Bernardino No.1	n/a	Remove	LST	109
M97-T3	Devers-San Bernardino No.1	n/a	Remove	LST	90
M97-T2	Devers-San Bernardino No.1	n/a	Remove	LST	84
M97-T1	Devers-San Bernardino No.1	n/a	Remove	LST	84
M96-T3	Devers-San Bernardino No.1	n/a	Remove	LST	83
M96-T2	Devers-San Bernardino No.1	n/a	Remove	LST	77
M96-T1	Devers-San Bernardino No.1	n/a	Remove	LST	81
M95-T3	Devers-San Bernardino No.1	n/a	Remove	LST	80
M95-T2	Devers-San Bernardino No.1	n/a	Remove	LST	78
M95-T1	Devers-San Bernardino No.1	n/a	Remove	LST	81
M94-T2	Devers-San Bernardino No.1	n/a	Remove	LST	78
M94-T1	Devers-San Bernardino No.1	n/a	Remove	LST	79
M93-T4	Devers-San Bernardino No.1	n/a	Remove	LST	75
M93-T3	Devers-San Bernardino No.1	n/a	Remove	LST	98
M93-T2	Devers-San Bernardino No.1	n/a	Remove	LST	84
M93-T1	Devers-San Bernardino No.1	n/a	Remove	LST	78
M92-T3	Devers-San Bernardino No.1	n/a	Remove	LST	83
M92-T2	Devers-San Bernardino No.1	n/a	Remove	LST	108
M92-T1	Devers-San Bernardino No.1	n/a	Remove	LST	84
M91-T3	Devers-San Bernardino No.1	n/a	Remove	LST	82
M91-T2	Devers-San Bernardino No.1	n/a	Remove	LST	81
M91-T1	Devers-San Bernardino No.1	n/a	Remove	LST	82
M90-T4	Devers-San Bernardino No.1	n/a	Remove	LST	81
M90-T3	Devers-San Bernardino No.1	n/a	Remove	LST	83
M90-T2	Devers-San Bernardino No.1	n/a	Remove	LST	74
M90-T1	Devers-San Bernardino No.1	n/a	Remove	LST	77
M89-T3	Devers-San Bernardino No.1	n/a	Remove	LST	75
M89-T2	Devers-San Bernardino No.1	n/a	Remove	LST	84
M89-T1	Devers-San Bernardino No.1	n/a	Remove	LST	91
M39-T2	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	146
M39-T1	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	130
M38-T4	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	134
M38-T3	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	142
M38-T2	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	156

Table Ap.1A-3. Structure Heights – Segment 3

Structure No.	Circuit 1	Circuit 2	Status	Type	Height (feet)
M38-T1	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	183
M37-T3	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	179
M37-T2	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	135
M37-T1	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	135
M36-T3	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	119
M36-T2	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	134
M36-T1	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	127
M35-T2	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	122
M35-T1	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	130
M34-T3	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	147
M34-T2	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	117
M34-T1	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	118
M33-T5	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	118
M33-T4	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	123
M33-T3	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	133
M33-T2	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	137
M33-T1	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	120
M32-T3	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	131
M32-T2	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	151
M32-T1	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	147
M31-T3	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	151
M31-T2	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	155
M31-T1	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	129
M30-T4	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	152
M30-T3	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	120
M30-T2	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	153
M30-T1	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	178
M29-T2	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	116

Table Ap.1A-4. Structure Heights – Segment 4

Structure No.	Circuit 1	Circuit 2	Status	Type	Height (feet)
El Casco Sub	Devers-El Casco	n/a	Existing	Rack	60
4S60	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	175
4S59	Devers-Vista No.1	Devers-Vista No.2	Modify	LST	147
4S58	Devers-Vista No.1	Devers-Vista No.2	Modify	LST	139
4S57	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	128
4S56	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	128
4S55	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	148
4S54	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	154
4S53	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	145
4S52	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	136
4S51	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	157
4S50	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	175
4S48	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	180
4S47	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	157
4S46	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	154
4S45	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	155
4S44	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	149
4S43	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	175
4S42	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	154
4S41	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	157
4S40	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	121
4S39	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	139
4S38	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	175
4S37	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	175
4S36	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	127
4S35	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	180
4S34	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	155
4S32	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	160
4S31	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	128
4S30	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	142
4S29	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	175
4S27	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	160
4S26	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	166
4S25	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	151
4S24	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	154
4S23	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	137
4S22	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	124
4S21	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	139
4S20	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	127

Table Ap.1A-4. Structure Heights – Segment 4

Structure No.	Circuit 1	Circuit 2	Status	Type	Height (feet)
4S19	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	130
4S18	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	133
4S17	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	136
4S16	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	127
4S15	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	130
4S14	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	160
4S13	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	113
4S12	Devers-Vista No.1	Devers-Vista No.2	Proposed	TSP	130
4S10	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	116
4S09	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	160
4S08	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	116
4S07	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	127
4S06	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	160
4S05	Devers-Vista No.1	Devers-Vista No.2	Proposed	TSP	125
4S04	Devers-Vista No.1	Devers-Vista No.2	Proposed	TSP	190
4S03	Devers-Vista No.1	Devers-Vista No.2	Proposed	TSP	165
4S02	Devers-Vista No.1	Devers-Vista No.2	Proposed	TSP	180
4S01	Devers-Vista No.1	Devers-Vista No.2	Proposed	TSP	170
4N65	Devers-El Casco	n/a	Modify	LST	133
4N64	Devers-San Bernardino	Devers-El Casco	Proposed	LST	134
4N63	Devers-San Bernardino	Devers-El Casco	Proposed	LST	134
4N62	Devers-San Bernardino	Devers-El Casco	Proposed	LST	125
4N61	Devers-San Bernardino	Devers-El Casco	Proposed	LST	142
4N60	Devers-San Bernardino	Devers-El Casco	Proposed	LST	136
4N59	Devers-San Bernardino	Devers-El Casco	Proposed	TSP	125
4N58	Devers-San Bernardino	Devers-El Casco	Proposed	TSP	125
4N57	Devers-San Bernardino	Devers-El Casco	Proposed	LST	119
4N56	Devers-San Bernardino	Devers-El Casco	Modify	LST	176
4N55	Devers-San Bernardino	Devers-El Casco	Proposed	LST	157
4N54	Devers-San Bernardino	Devers-El Casco	Proposed	LST	154
4N53	Devers-San Bernardino	Devers-El Casco	Proposed	LST	145
4N52	Devers-San Bernardino	Devers-El Casco	Proposed	LST	139
4N51	Devers-San Bernardino	Devers-El Casco	Proposed	LST	175
4N50	Devers-San Bernardino	Devers-El Casco	Proposed	LST	175
4N48	Devers-San Bernardino	Devers-El Casco	Proposed	LST	180
4N47	Devers-San Bernardino	Devers-El Casco	Proposed	LST	160
4N46	Devers-San Bernardino	Devers-El Casco	Proposed	LST	145
4N45	Devers-San Bernardino	Devers-El Casco	Proposed	LST	155
4N44	Devers-San Bernardino	Devers-El Casco	Proposed	LST	155
4N43	Devers-San Bernardino	Devers-El Casco	Proposed	LST	162

Table Ap.1A-4. Structure Heights – Segment 4

Structure No.	Circuit 1	Circuit 2	Status	Type	Height (feet)
4N42	Devers-San Bernardino	Devers-El Casco	Proposed	LST	151
4N41	Devers-San Bernardino	Devers-El Casco	Proposed	LST	154
4N40	Devers-San Bernardino	Devers-El Casco	Proposed	LST	127
4N39	Devers-San Bernardino	Devers-El Casco	Proposed	LST	136
4N38	Devers-San Bernardino	Devers-El Casco	Proposed	LST	175
4N37	Devers-San Bernardino	Devers-El Casco	Proposed	LST	175
4N36	Devers-San Bernardino	Devers-El Casco	Proposed	LST	136
4N35	Devers-San Bernardino	Devers-El Casco	Proposed	LST	160
4N34	Devers-San Bernardino	Devers-El Casco	Proposed	LST	155
4N32	Devers-San Bernardino	Devers-El Casco	Proposed	LST	160
4N31	Devers-San Bernardino	Devers-El Casco	Proposed	LST	130
4N30	Devers-San Bernardino	Devers-El Casco	Proposed	LST	130
4N29	Devers-San Bernardino	Devers-El Casco	Proposed	LST	175
4N27	Devers-San Bernardino	Devers-El Casco	Proposed	LST	175
4N26	Devers-San Bernardino	Devers-El Casco	Proposed	LST	175
4N25	Devers-San Bernardino	Devers-El Casco	Proposed	LST	145
4N24	Devers-San Bernardino	Devers-El Casco	Proposed	LST	160
4N23	Devers-San Bernardino	Devers-El Casco	Proposed	LST	134
4N22	Devers-San Bernardino	Devers-El Casco	Proposed	LST	127
4N21	Devers-San Bernardino	Devers-El Casco	Proposed	LST	136
4N20	Devers-San Bernardino	Devers-El Casco	Proposed	LST	130
4N19	Devers-San Bernardino	Devers-El Casco	Proposed	LST	127
4N18	Devers-San Bernardino	Devers-El Casco	Proposed	LST	133
4N17	Devers-San Bernardino	Devers-El Casco	Proposed	LST	133
4N16	Devers-San Bernardino	Devers-El Casco	Proposed	LST	127
4N15	Devers-San Bernardino	Devers-El Casco	Proposed	LST	124
4N14	Devers-San Bernardino	Devers-El Casco	Proposed	LST	163
4N13	Devers-San Bernardino	Devers-El Casco	Modify	LST	126
4N12	Devers-San Bernardino	Devers-El Casco	Proposed	TSP	138
4N10	Devers-San Bernardino	Devers-El Casco	Proposed	LST	113
4N09	Devers-San Bernardino	Devers-El Casco	Proposed	LST	175
4N08	Devers-San Bernardino	Devers-El Casco	Proposed	LST	122
4N07	Devers-San Bernardino	Devers-El Casco	Proposed	LST	133
4N06	Devers-San Bernardino	Devers-El Casco	Proposed	LST	142
4N05	Devers-San Bernardino	Devers-El Casco	Proposed	TSP	125
4N04	Devers-San Bernardino	Devers-El Casco	Proposed	TSP	190
4N03	Devers-San Bernardino	Devers-El Casco	Proposed	TSP	154
4N02	Devers-San Bernardino	Devers-El Casco	Proposed	TSP	150
4N01	Devers-San Bernardino	Devers-El Casco	Proposed	TSP	160
PP#123356	Devers-El Casco	n/a	Remove	Wood Pole	80

Table Ap.1A-4. Structure Heights – Segment 4

Structure No.	Circuit 1	Circuit 2	Status	Type	Height (feet)
PP#123355	Devers-El Casco	n/a	Remove	Wood Pole	91
PP#123354	Devers-El Casco	n/a	Remove	Wood Pole	86
PP#123353	Devers-El Casco	n/a	Remove	Wood Pole	47
PP#123352	Devers-El Casco	n/a	Remove	Wood Pole	77
PP#123351	Devers-El Casco	n/a	Remove	Wood Pole	78
PP#123350	Devers-El Casco	n/a	Remove	Wood Pole	77
PP#123349	Devers-El Casco	n/a	Remove	Wood Pole	82
PP#123348	Devers-El Casco	n/a	Remove	Wood Pole	77
PP#123347	Devers-El Casco	n/a	Remove	Wood Pole	79
PP#123346	Devers-El Casco	n/a	Remove	Wood Pole	66
PP#123345	Devers-El Casco	n/a	Remove	Wood Pole	83
PP#123344	Devers-El Casco	n/a	Remove	Wood Pole	79
PP#123343	Devers-El Casco	n/a	Remove	Wood Pole	87
PP#123342	Devers-El Casco	n/a	Remove	Wood Pole	81
PP#123341	Devers-El Casco	n/a	Remove	Wood Pole	89
PP#123340	Devers-El Casco	n/a	Remove	Wood Pole	76
PP#123339	Devers-El Casco	n/a	Remove	Wood Pole	77
PP#123338	Devers-El Casco	n/a	Remove	Wood Pole	77
PP#123337	Devers-El Casco	n/a	Remove	Wood Pole	103
PP#123336	Devers-El Casco	n/a	Remove	Wood Pole	78
PP#123335	Devers-El Casco	n/a	Remove	Wood Pole	78
PP#123334	Devers-El Casco	n/a	Remove	Wood Pole	79
PP#123333	Devers-El Casco	n/a	Remove	Wood Pole	78
PP#123332	Devers-El Casco	n/a	Remove	Wood Pole	78
PP#123331	Devers-El Casco	n/a	Remove	Wood Pole	79
PP#123330	Devers-El Casco	n/a	Remove	Wood Pole	78
PP#123329	Devers-El Casco	n/a	Remove	Wood Pole	79
PP#123328	Devers-El Casco	n/a	Remove	Wood Pole	78
PP#123327	Devers-El Casco	n/a	Remove	Wood Pole	78
PP#123326	Devers-El Casco	n/a	Remove	Wood Pole	78
PP#123325	Devers-El Casco	n/a	Remove	Wood Pole	78
PP#123324	Devers-El Casco	n/a	Remove	Wood Pole	80
PP#123323	Devers-El Casco	n/a	Remove	Wood Pole	79
PP#123322	Devers-El Casco	n/a	Remove	Wood Pole	78
PP#123321	Devers-El Casco	n/a	Remove	Wood Pole	79
PP#123320	Devers-El Casco	n/a	Remove	Wood Pole	79
PP#123319	Devers-El Casco	n/a	Remove	Wood Pole	83
PP#123318 A	Devers-El Casco	n/a	Remove	Wood Pole	75
PP#123318	Devers-El Casco	n/a	Remove	Wood Pole	78

Table Ap.1A-4. Structure Heights – Segment 4

Structure No.	Circuit 1	Circuit 2	Status	Type	Height (feet)
PP#123317	Devers-El Casco	n/a	Remove	Wood Pole	77
PP#123316	Devers-El Casco	n/a	Remove	Wood Pole	76
PP#123315	Devers-El Casco	n/a	Remove	Wood Pole	78
PP#123314	Devers-El Casco	n/a	Remove	Wood Pole	76
PP#123313	Devers-El Casco	n/a	Remove	Wood Pole	88
PP#123312	Devers-El Casco	n/a	Remove	Wood Pole	83
PP#123311	Devers-El Casco	n/a	Remove	Wood Pole	73
PP#123310	Devers-El Casco	n/a	Remove	Wood Pole	77
PP#123309	Devers-El Casco	n/a	Remove	Wood Pole	77
PP#123308	Devers-El Casco	n/a	Remove	Wood Pole	76
PP#123307	Devers-El Casco	n/a	Remove	Wood Pole	77
PP#123306	Devers-El Casco	n/a	Remove	Wood Pole	71
PP#123305	Devers-El Casco	n/a	Remove	Wood Pole	76
PP#123304	Devers-El Casco	n/a	Remove	Wood Pole	71
PP#123303	Devers-El Casco	n/a	Remove	Wood Pole	75
PP#123302	Devers-El Casco	n/a	Remove	Wood Pole	78
PP#123301	Devers-El Casco	n/a	Remove	Wood Pole	73
PP#123300	Devers-El Casco	n/a	Remove	Wood Pole	72
PP#123299	Devers-El Casco	n/a	Remove	Wood Pole	79
PP#123298	Devers-El Casco	n/a	Remove	Wood Pole	74
PP#123297	Devers-El Casco	n/a	Remove	Wood Pole	79
PP#123296	Devers-El Casco	n/a	Remove	Wood Pole	78
PP#123295	Devers-El Casco	n/a	Remove	Wood Pole	78
PP#123294	Devers-El Casco	n/a	Remove	LST	96
PP#123293	Devers-El Casco	n/a	Remove	LST	96
PP#123292	Devers-El Casco	n/a	Remove	LST	95
PP#123291	Devers-El Casco	n/a	Remove	LST	85
PP#123290	Devers-El Casco	n/a	Remove	LST	86
PP#123289	Devers-El Casco	n/a	Remove	LST	86
PP#123288	Devers-El Casco	n/a	Remove	LST	86
PP#123287	Devers-El Casco	n/a	Remove	LST	86
PP#123286	Devers-El Casco	n/a	Remove	LST	84
PP#123285	Devers-El Casco	n/a	Remove	LST	86
PP#123284	Devers-El Casco	n/a	Remove	LST	97
PP#123283	Devers-El Casco	n/a	Remove	LST	96
PP#123282	Devers-El Casco	n/a	Remove	LST	96
PP#123281	Devers-El Casco	n/a	Remove	LST	86
PP#123280	Devers-El Casco	n/a	Remove	LST	86
PP#123279	Devers-El Casco	n/a	Remove	LST	94
PP#123278	Devers-El Casco	n/a	Remove	LST	85

Table Ap.1A-4. Structure Heights – Segment 4

Structure No.	Circuit 1	Circuit 2	Status	Type	Height (feet)
PP#123277	Devers-El Casco	n/a	Remove	LST	96
PP#123276	Devers-El Casco	n/a	Remove	LST	97
PP#123275	Devers-El Casco	n/a	Remove	LST	95
PP#123274	Devers-El Casco	n/a	Remove	LST	97
M88-T2	Devers-San Bernardino No.1	n/a	Remove	LST	103
M88-T1	Devers-San Bernardino No.1	n/a	Remove	LST	99
M87-T4	Devers-San Bernardino No.1	n/a	Remove	LST	79
M87-T3	Devers-San Bernardino No.1	n/a	Remove	LST	78
M87-T2	Devers-San Bernardino No.1	n/a	Remove	LST	89
M87-T1	Devers-San Bernardino No.1	n/a	Remove	LST	83
M86-T3	Devers-San Bernardino No.1	n/a	Remove	LST	104
M86-T2	Devers-San Bernardino No.1	n/a	Remove	LST	92
M86-T1	Devers-San Bernardino No.1	n/a	Remove	LST	89
M85-T4	Devers-San Bernardino No.1	n/a	Remove	LST	101
M85-T3	Devers-San Bernardino No.1	n/a	Remove	LST	85
M85-T2	Devers-San Bernardino No.1	n/a	Remove	LST	85
M85-T1	Devers-San Bernardino No.1	n/a	Remove	LST	102
M84-T4	Devers-San Bernardino No.1	n/a	Remove	LST	104
M84-T3	Devers-San Bernardino No.1	n/a	Remove	LST	103
M84-T2	Devers-San Bernardino No.1	n/a	Remove	LST	79
M84-T1	Devers-San Bernardino No.1	n/a	Remove	LST	102
M83-T3	Devers-San Bernardino No.1	n/a	Remove	LST	85
M83-T2	Devers-San Bernardino No.1	n/a	Remove	LST	109
M83-T1	Devers-San Bernardino No.1	n/a	Remove	LST	90
M82-T4	Devers-San Bernardino No.1	n/a	Remove	LST	85
M82-T3	Devers-San Bernardino No.1	n/a	Remove	LST	96
M82-T2	Devers-San Bernardino No.1	n/a	Remove	LST	84
M82-T1	Devers-San Bernardino No.1	n/a	Remove	LST	83
M81-T4	Devers-San Bernardino No.1	n/a	Remove	LST	84
M81-T3	Devers-San Bernardino No.1	n/a	Remove	LST	85
M81-T2	Devers-San Bernardino No.1	n/a	Remove	LST	85
M81-T1	Devers-San Bernardino No.1	n/a	Remove	LST	85
M80-T4	Devers-San Bernardino No.1	n/a	Remove	LST	91
M80-T3	Devers-San Bernardino No.1	n/a	Remove	LST	103
M80-T2	Devers-San Bernardino No.1	n/a	Remove	LST	90
M80-T1	Devers-San Bernardino No.1	n/a	Remove	LST	82
M79-T3	Devers-San Bernardino No.1	n/a	Remove	LST	90
M79-T2	Devers-San Bernardino No.1	n/a	Remove	LST	85
M79-T1	Devers-San Bernardino No.1	n/a	Remove	LST	84
M78-T4	Devers-San Bernardino No.1	n/a	Remove	LST	86

Table Ap.1A-4. Structure Heights – Segment 4

Structure No.	Circuit 1	Circuit 2	Status	Type	Height (feet)
M78-T3	Devers-San Bernardino No.1	n/a	Remove	LST	82
M78-T2	Devers-San Bernardino No.1	n/a	Remove	LST	78
M78-T1	Devers-San Bernardino No.1	n/a	Remove	LST	91
M77-T3	Devers-San Bernardino No.1	n/a	Remove	LST	104
M27-T4	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	126
M27-T3	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	145
M27-T2	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	156
M27-T1	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	136
M26-T3	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	152
M26-T2	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	157
M26-T1	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	138
M25-T4	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	140
M25-T3	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	145
M25-T2	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	124
M25-T1	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	145
M24-T4	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	140
M24-T3	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	145
M24-T2	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	119
M24-T1	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	144
M23-T3	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	156
M23-T2	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	155
M23-T1	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	132
M22-T4	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	134
M22-T3	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	136
M22-T2	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	130
M22-T1	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	120
M21-T4	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	128
M21-T3	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	132
M21-T2	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	125
M21-T1	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	127
M20-T3	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	125
M20-T2	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	149
M20-T1	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	130
M19-T3	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	149
M19-T2	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	134
M19-T1	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	136
M18-T4	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	124
M18-T3	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	127
M18-T2	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	157
M18-T1	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	123

Table Ap.1A-4. Structure Heights – Segment 4

Structure No.	Circuit 1	Circuit 2	Status	Type	Height (feet)
M17-T3	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	130

Table Ap.1A-5. Structure Heights – Segment 5

Structure No.	Circuit 1	Circuit 2	Status	Type	Height (feet)
5S54	Devers-Vista No.1	Devers-Vista No.2	Proposed	TSP	195
5S52	Devers-Vista No.1	Devers-Vista No.2	Proposed	TSP	195
5S49	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	180
5S48	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	127
5S47-1	Devers-Vista No.1	Devers-Vista No.2	Proposed	TSP	110
5S46-1	Devers-Vista No.1	Devers-Vista No.2	Proposed	TSP	120
5S45-1	Devers-Vista No.1	Devers-Vista No.2	Proposed	TSP	120
5S44A-1	Devers-Vista No.1	Devers-Vista No.2	Proposed	TSP	120
5S44-1	Devers-Vista No.1	Devers-Vista No.2	Proposed	TSP	125
5S43-1	Devers-Vista No.1	Devers-Vista No.2	Proposed	TSP	120
5S42-1	Devers-Vista No.1	Devers-Vista No.2	Proposed	TSP	120
5S41-1	Devers-Vista No.1	Devers-Vista No.2	Proposed	TSP	120
5S40-1	Devers-Vista No.1	Devers-Vista No.2	Proposed	TSP	120
5S39-1	Devers-Vista No.1	Devers-Vista No.2	Proposed	TSP	120
5S38-1	Devers-Vista No.1	Devers-Vista No.2	Proposed	TSP	120
5S37-1	Devers-Vista No.1	Devers-Vista No.2	Proposed	TSP	120
5S36-1	Devers-Vista No.1	Devers-Vista No.2	Proposed	TSP	125
5S35-1	Devers-Vista No.1	Devers-Vista No.2	Proposed	TSP	125
5S34-1	Devers-Vista No.1	Devers-Vista No.2	Proposed	TSP	120
5S32-1	Devers-Vista No.1	Devers-Vista No.2	Proposed	TSP	125
5S31-1	Devers-Vista No.1	Devers-Vista No.2	Proposed	TSP	125
5S30	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	146
5S29	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	155
5S28	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	145
5S27	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	180
5S24	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	175
5S23	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	180
5S22	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	175
5S21	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	151
5S20	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	145
5S19	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	175
5S18	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	175
5S17	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	148
5S16	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	160
5S15	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	180
5S14	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	160
5S13	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	175
5S12	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	130
5S11	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	160
5S10	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	145

Table Ap.1A-5. Structure Heights – Segment 5

Structure No.	Circuit 1	Circuit 2	Status	Type	Height (feet)
5S09	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	180
5S08	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	154
5S07	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	185
5S06	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	145
5S05	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	154
5S04	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	148
5S03	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	151
5S02	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	142
5S01	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	140
5N54	Devers-El Casco	Devers-San Bernardino	Proposed	TSP	195
5N52	Devers-El Casco	Devers-San Bernardino	Proposed	TSP	195
5N49	Devers-El Casco	Devers-San Bernardino	Proposed	LST	180
5N48	Devers-El Casco	Devers-San Bernardino	Proposed	LST	127
5N47-1	Devers-El Casco	Devers-San Bernardino	Proposed	TSP	110
5N46-1	Devers-El Casco	Devers-San Bernardino	Proposed	TSP	120
5N45-1	Devers-El Casco	Devers-San Bernardino	Proposed	TSP	120
5N44A-1	Devers-El Casco	Devers-San Bernardino	Proposed	TSP	120
5N44-1	Devers-El Casco	Devers-San Bernardino	Proposed	TSP	125
5N43-1	Devers-El Casco	Devers-San Bernardino	Proposed	TSP	120
5N42-1	Devers-El Casco	Devers-San Bernardino	Proposed	TSP	120
5N41-1	Devers-El Casco	Devers-San Bernardino	Proposed	TSP	120
5N40-1	Devers-El Casco	Devers-San Bernardino	Proposed	TSP	120
5N39-1	Devers-El Casco	Devers-San Bernardino	Proposed	TSP	120
5N38-1	Devers-El Casco	Devers-San Bernardino	Proposed	TSP	120
5N37-1	Devers-El Casco	Devers-San Bernardino	Proposed	TSP	120
5N36-1	Devers-El Casco	Devers-San Bernardino	Proposed	TSP	125
5N35-1	Devers-El Casco	Devers-San Bernardino	Proposed	TSP	125
5N34-1	Devers-El Casco	Devers-San Bernardino	Proposed	TSP	120
5N32-1	Devers-El Casco	Devers-San Bernardino	Proposed	TSP	125
5N31-1	Devers-El Casco	Devers-San Bernardino	Proposed	TSP	125
5N30	Devers-El Casco	Devers-San Bernardino	Proposed	LST	146
5N29	Devers-El Casco	Devers-San Bernardino	Proposed	LST	155
5N28	Devers-El Casco	Devers-San Bernardino	Proposed	LST	145
5N27	Devers-El Casco	Devers-San Bernardino	Proposed	LST	180
5N24	Devers-El Casco	Devers-San Bernardino	Proposed	LST	175
5N23	Devers-El Casco	Devers-San Bernardino	Proposed	LST	180
5N22	Devers-El Casco	Devers-San Bernardino	Proposed	LST	175
5N21	Devers-El Casco	Devers-San Bernardino	Proposed	LST	151
5N20	Devers-El Casco	Devers-San Bernardino	Proposed	LST	145
5N19	Devers-El Casco	Devers-San Bernardino	Proposed	LST	175

Table Ap.1A-5. Structure Heights – Segment 5

Structure No.	Circuit 1	Circuit 2	Status	Type	Height (feet)
5N18	Devers-El Casco	Devers-San Bernardino	Proposed	LST	175
5N17	Devers-El Casco	Devers-San Bernardino	Proposed	LST	148
5N16	Devers-El Casco	Devers-San Bernardino	Proposed	LST	157
5N15	Devers-El Casco	Devers-San Bernardino	Proposed	LST	182
5N14	Devers-El Casco	Devers-San Bernardino	Proposed	LST	160
5N13	Devers-El Casco	Devers-San Bernardino	Proposed	LST	175
5N12	Devers-El Casco	Devers-San Bernardino	Proposed	LST	130
5N11	Devers-El Casco	Devers-San Bernardino	Proposed	LST	160
5N10	Devers-El Casco	Devers-San Bernardino	Proposed	LST	142
5N09	Devers-El Casco	Devers-San Bernardino	Proposed	LST	177
5N08	Devers-El Casco	Devers-San Bernardino	Proposed	LST	148
5N07	Devers-El Casco	Devers-San Bernardino	Proposed	LST	185
5N06	Devers-El Casco	Devers-San Bernardino	Proposed	LST	137
5N05	Devers-El Casco	Devers-San Bernardino	Proposed	LST	151
5N04	Devers-El Casco	Devers-San Bernardino	Proposed	LST	148
5N03	Devers-El Casco	Devers-San Bernardino	Proposed	LST	151
5N02	Devers-El Casco	Devers-San Bernardino	Proposed	LST	142
5N01	Devers-El Casco	Devers-San Bernardino	Proposed	LST	121
T218	Devers-Vista No.1	n/a	Remove	Wood Pole	79
T217A	Devers-Vista No.1	n/a	Remove	Wood Pole	79
T217	Devers-Vista No.1	n/a	Remove	Wood Pole	79
T216	Devers-Vista No.1	n/a	Remove	Wood Pole	78
T215	Devers-Vista No.1	n/a	Remove	Wood Pole	80
T214	Devers-Vista No.1	n/a	Remove	Wood Pole	79
T213	Devers-Vista No.1	n/a	Remove	Wood Pole	78
T212	Devers-Vista No.1	n/a	Remove	Wood Pole	79
T211	Devers-Vista No.1	n/a	Remove	Wood Pole	84
T210	Devers-Vista No.1	n/a	Remove	Wood Pole	80
T209	Devers-Vista No.1	n/a	Remove	Wood Pole	78
T208	Devers-Vista No.1	n/a	Remove	Wood Pole	79
T207	Devers-Vista No.1	n/a	Remove	Wood Pole	87
T206	Devers-Vista No.1	n/a	Remove	Wood Pole	79
T205	Devers-Vista No.1	n/a	Remove	Wood Pole	77
T204	Devers-Vista No.1	n/a	Remove	Wood Pole	68
T203	Devers-Vista No.1	n/a	Remove	Wood Pole	78
T202	Devers-Vista No.1	n/a	Remove	Wood Pole	78
T201	Devers-Vista No.1	n/a	Remove	Wood Pole	78
T200	Devers-Vista No.1	n/a	Remove	Wood Pole	79
T199	Devers-Vista No.1	n/a	Remove	Wood Pole	79
T198	Devers-Vista No.1	n/a	Remove	Wood Pole	79

Table Ap.1A-5. Structure Heights – Segment 5

Structure No.	Circuit 1	Circuit 2	Status	Type	Height (feet)
T197	Devers-Vista No.1	n/a	Remove	Wood Pole	76
T196	Devers-Vista No.1	n/a	Remove	Wood Pole	78
T195	Devers-Vista No.1	n/a	Remove	Wood Pole	79
T194	Devers-Vista No.1	n/a	Remove	Wood Pole	78
T193	Devers-Vista No.1	n/a	Remove	Wood Pole	79
T192	Devers-Vista No.1	n/a	Remove	Wood Pole	82
T191	Devers-Vista No.1	n/a	Remove	Wood Pole	79
T190	Devers-Vista No.1	n/a	Remove	Wood Pole	76
T189	Devers-Vista No.1	n/a	Remove	Wood Pole	79
T188	Devers-Vista No.1	n/a	Remove	Wood Pole	79
T187	Devers-Vista No.1	n/a	Remove	Wood Pole	79
T186	Devers-Vista No.1	n/a	Remove	Wood Pole	78
T185	Devers-Vista No.1	n/a	Remove	Wood Pole	78
T184	Devers-Vista No.1	n/a	Remove	Wood Pole	83
T183	Devers-Vista No.1	n/a	Remove	Wood Pole	78
T182	Devers-Vista No.1	n/a	Remove	Wood Pole	84
T181	Devers-Vista No.1	n/a	Remove	Wood Pole	83
T175	Devers-Vista No.1	n/a	Remove	Wood Pole	92
T174	Devers-Vista No.1	n/a	Remove	Wood Pole	78
T173	Devers-Vista No.1	n/a	Remove	Wood Pole	78
T172	Devers-Vista No.1	n/a	Remove	Wood Pole	77
T171	Devers-Vista No.1	n/a	Remove	Wood Pole	81
T170	Devers-Vista No.1	n/a	Remove	Wood Pole	64
T169	Devers-Vista No.1	n/a	Remove	Wood Pole	78
T168	Devers-Vista No.1	n/a	Remove	Wood Pole	78
T167	Devers-Vista No.1	n/a	Remove	Wood Pole	79
T166	Devers-Vista No.1	n/a	Remove	Wood Pole	80
T165	Devers-Vista No.1	n/a	Remove	Wood Pole	82
T164	Devers-Vista No.1	n/a	Remove	Wood Pole	79
T163	Devers-Vista No.1	n/a	Remove	Wood Pole	79
T162	Devers-Vista No.1	n/a	Remove	Wood Pole	78
T161	Devers-Vista No.1	n/a	Remove	Wood Pole	82
T160	Devers-Vista No.1	n/a	Remove	Wood Pole	67
T159A	Devers-Vista No.1	n/a	Remove	Wood Pole	74
T159	Devers-Vista No.1	n/a	Remove	Wood Pole	82
T158	Devers-Vista No.1	n/a	Remove	Wood Pole	84
T157	Devers-Vista No.1	n/a	Remove	Wood Pole	102
T156	Devers-Vista No.1	n/a	Remove	Wood Pole	103
T155	Devers-Vista No.1	n/a	Remove	Wood Pole	82
PP#123360	Devers-El Casco	n/a	Remove	Wood Pole	56

Table Ap.1A-5. Structure Heights – Segment 5

Structure No.	Circuit 1	Circuit 2	Status	Type	Height (feet)
PP#123359	Devers-El Casco	n/a	Remove	Wood Pole	67
PP#123358	Devers-El Casco	n/a	Remove	Wood Pole	77
PP#123357	Devers-El Casco	n/a	Remove	Wood Pole	92
M9-T3	Devers-El Casco	Devers-Vista No.2	Remove	LST	126
M9-T2	Devers-El Casco	Devers-Vista No.2	Remove	LST	150
M9-T1	Devers-El Casco	Devers-Vista No.2	Remove	LST	156
M8-T4	Devers-El Casco	Devers-Vista No.2	Remove	LST	148
M8-T3	Devers-El Casco	Devers-Vista No.2	Remove	LST	148
M8-T2	Devers-El Casco	Devers-Vista No.2	Remove	LST	135
M77-T2	Devers-San Bernardino No.1	n/a	Remove	LST	85
M77-T1	Devers-San Bernardino No.1	n/a	Remove	LST	82
M76-T4	Devers-San Bernardino No.1	n/a	Remove	LST	79
M76-T3	Devers-San Bernardino No.1	n/a	Remove	LST	93
M76-T2	Devers-San Bernardino No.1	n/a	Remove	LST	79
M76-T1	Devers-San Bernardino No.1	n/a	Remove	LST	81
M75-T5	Devers-San Bernardino No.1	n/a	Remove	LST	84
M75-T4	Devers-San Bernardino No.1	n/a	Remove	LST	85
M75-T3	Devers-San Bernardino No.1	n/a	Remove	LST	91
M75-T2	Devers-San Bernardino No.1	n/a	Remove	LST	84
M75-T1	Devers-San Bernardino No.1	n/a	Remove	LST	85
M74-T4	Devers-San Bernardino No.1	n/a	Remove	LST	81
M74-T3	Devers-San Bernardino No.1	n/a	Remove	LST	84
M74-T2	Devers-San Bernardino No.1	n/a	Remove	LST	86
M74-T1	Devers-San Bernardino No.1	n/a	Remove	LST	80
M73-T3	Devers-San Bernardino No.1	n/a	Remove	LST	108
M73-T2	Devers-San Bernardino No.1	n/a	Remove	LST	90
M73-T1	Devers-San Bernardino No.1	n/a	Remove	LST	109
M72-T3	Devers-San Bernardino No.1	n/a	Remove	LST	90
M72-T2	Devers-San Bernardino No.1	n/a	Remove	LST	97
M72-T1	Devers-San Bernardino No.1	n/a	Remove	LST	90
M71-T4	Devers-San Bernardino No.1	n/a	Remove	LST	109
M71-T3	Devers-San Bernardino No.1	n/a	Remove	LST	84
M71-T2	Devers-San Bernardino No.1	n/a	Remove	LST	84
M71-T1	Devers-San Bernardino No.1	n/a	Remove	LST	96
M70-T3	Devers-San Bernardino No.1	n/a	Remove	LST	79
M70-T2	Devers-San Bernardino No.1	n/a	Remove	LST	81
M70-T1	Devers-San Bernardino No.1	n/a	Remove	LST	78
M69-T3	Devers-San Bernardino No.1	n/a	Remove	LST	99
M69-T2	Devers-San Bernardino No.1	n/a	Remove	LST	90
M69-T1	Devers-San Bernardino No.1	n/a	Remove	LST	83

Table Ap.1A-5. Structure Heights – Segment 5

Structure No.	Circuit 1	Circuit 2	Status	Type	Height (feet)
M68-T4	Devers-San Bernardino No.1	n/a	Remove	LST	90
M68-T3	Devers-San Bernardino No.1	n/a	Remove	LST	84
M17-T2	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	137
M17-T1	Devers-Vista No.1	Devers-Vista No.2	Remove	LST	123
M16-T5	Devers-Vista No.1	n/a	Remove	LST	54
M16-T4	Devers-El Casco	Devers-Vista No.2	Remove	LST	172
M16-T3	Devers-El Casco	Devers-Vista No.2	Remove	LST	146
M16-T2	Devers-El Casco	Devers-Vista No.2	Remove	LST	124
M16-T1	Devers-El Casco	Devers-Vista No.2	Remove	LST	127
M15-T4	Devers-El Casco	Devers-Vista No.2	Remove	LST	121
M15-T3	Devers-El Casco	Devers-Vista No.2	Remove	LST	131
M15-T2	Devers-El Casco	Devers-Vista No.2	Remove	LST	131
M15-T1	Devers-El Casco	Devers-Vista No.2	Remove	LST	123
M14-T4	Devers-El Casco	Devers-Vista No.2	Remove	LST	127
M14-T3	Devers-El Casco	Devers-Vista No.2	Remove	LST	133
M14-T2	Devers-El Casco	Devers-Vista No.2	Remove	LST	136
M14-T1	Devers-El Casco	Devers-Vista No.2	Remove	LST	128
M13-T3	Devers-El Casco	Devers-Vista No.2	Remove	LST	143
M13-T2	Devers-El Casco	Devers-Vista No.2	Remove	LST	157
M13-T1	Devers-El Casco	Devers-Vista No.2	Remove	LST	157
M12-T4	Devers-El Casco	Devers-Vista No.2	Remove	LST	154
M12-T3	Devers-El Casco	Devers-Vista No.2	Remove	LST	148
M12-T2	Devers-El Casco	Devers-Vista No.2	Remove	LST	136
M12-T1	Devers-El Casco	Devers-Vista No.2	Remove	LST	153
M11-T3	Devers-El Casco	Devers-Vista No.2	Remove	LST	156
M11-T2	Devers-El Casco	Devers-Vista No.2	Remove	LST	134
M11-T1	Devers-El Casco	Devers-Vista No.2	Remove	LST	149
M10-T3	Devers-El Casco	Devers-Vista No.2	Remove	LST	152
M10-T2	Devers-El Casco	Devers-Vista No.2	Remove	LST	128
M10-T1	Devers-El Casco	Devers-Vista No.2	Remove	LST	139
T271	Devers-Vista No.1	n/a	Remove	Wood Pole	80
T270	Devers-Vista No.1	n/a	Remove	Wood Pole	80
T269	Devers-Vista No.1	n/a	Remove	Wood Pole	81
T268	Devers-Vista No.1	n/a	Remove	Wood Pole	79
T267	Devers-Vista No.1	n/a	Remove	Wood Pole	82

Table Ap.1A-6. Structure Heights – Segment 6

Structure No.	Circuit 1	Circuit 2	Status	Type	Height (feet)
Interim West	Devers-Vista No.2	n/a	Existing	Rack	80
Interim West	Devers-Vista No.1	n/a	Existing	Rack	80
Interim West	Devers-El Casco	n/a	Existing	Rack	80
Interim West	Devers-San Bernardino	n/a	Existing	Rack	80
Interim East	Devers-Vista No.2	n/a	Existing	Rack	80
Interim East	Devers-San Bernardino	n/a	Existing	Rack	80
Interim East	Devers-El Casco	n/a	Existing	Rack	80
Interim East	Devers-Vista No.1	n/a	Existing	Rack	80
Devers Sub	Devers-Vista No.2	n/a	Existing	Rack	90
Devers Sub	Devers-San Bernardino	n/a	Existing	Rack	70
Devers Sub	Devers-El Casco	n/a	Existing	Rack	70
Devers Sub	Devers-Vista No.1	n/a	Existing	Rack	70
6S48	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	176
6S47	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	184
6S46	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	157
6S45	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	151
6S44	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	145
6S43	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	130
6S42	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	119
6S41	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	128
6S40	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	133
6S39	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	175
6S38	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	172
6S37	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	175
6S36	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	175
6S35	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	154
6S34	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	143
6S33	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	149
6S32	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	166
6S31A	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	180
6S31	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	175
6S30A	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	148
6S30	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	119
6S29	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	180
6S28A	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	165
6S28	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	190
6S27	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	164
6S26	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	160
6S25	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	160
6S24	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	172

Table Ap.1A-6. Structure Heights – Segment 6

Structure No.	Circuit 1	Circuit 2	Status	Type	Height (feet)
6S23	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	124
6S22	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	120
6S21	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	148
6S20	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	151
6S19	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	129
6S18	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	130
6S17	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	136
6S16	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	134
6S15	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	125
6S14	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	113
6S13	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	133
6S12	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	139
6S11	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	139
6S10	Devers-Vista No.1	Devers-Vista No.2	Proposed	LST	137
6N48	Devers-El Casco	Devers-San Bernardino	Proposed	LST	142
6N47	Devers-El Casco	Devers-San Bernardino	Proposed	LST	151
6N46	Devers-El Casco	Devers-San Bernardino	Proposed	LST	145
6N45	Devers-El Casco	Devers-San Bernardino	Proposed	LST	157
6N44	Devers-El Casco	Devers-San Bernardino	Proposed	LST	144
6N43	Devers-El Casco	Devers-San Bernardino	Proposed	LST	130
6N42	Devers-El Casco	Devers-San Bernardino	Proposed	LST	133
6N41	Devers-El Casco	Devers-San Bernardino	Proposed	LST	133
6N40	Devers-El Casco	Devers-San Bernardino	Proposed	LST	142
6N39	Devers-El Casco	Devers-San Bernardino	Proposed	LST	160
6N38	Devers-El Casco	Devers-San Bernardino	Proposed	LST	160
6N37	Devers-El Casco	Devers-San Bernardino	Proposed	LST	145
6N35	Devers-El Casco	Devers-San Bernardino	Proposed	LST	187
6N34	Devers-El Casco	Devers-San Bernardino	Proposed	LST	187
6N32	Devers-El Casco	Devers-San Bernardino	Proposed	LST	180
6N31	Devers-El Casco	Devers-San Bernardino	Proposed	TSP	136
6N30	Devers-El Casco	Devers-San Bernardino	Proposed	TSP	126
6N29	Devers-El Casco	Devers-San Bernardino	Proposed	LST	115
6N28	Devers-El Casco	Devers-San Bernardino	Proposed	LST	198
6N27	Devers-El Casco	Devers-San Bernardino	Proposed	LST	140
6N26	Devers-El Casco	Devers-San Bernardino	Proposed	LST	151
6N25	Devers-El Casco	Devers-San Bernardino	Proposed	LST	142
6N24	Devers-El Casco	Devers-San Bernardino	Proposed	LST	145
6N23	Devers-El Casco	Devers-San Bernardino	Proposed	LST	145
6N22	Devers-El Casco	Devers-San Bernardino	Proposed	LST	160
6N21	Devers-El Casco	Devers-San Bernardino	Proposed	LST	151

Table Ap.1A-6. Structure Heights – Segment 6

Structure No.	Circuit 1	Circuit 2	Status	Type	Height (feet)
6N20	Devers-El Casco	Devers-San Bernardino	Proposed	LST	175
6N19	Devers-El Casco	Devers-San Bernardino	Proposed	LST	160
6N18	Devers-El Casco	Devers-San Bernardino	Proposed	LST	160
6N17	Devers-El Casco	Devers-San Bernardino	Proposed	LST	132
6N16	Devers-El Casco	Devers-San Bernardino	Proposed	LST	155
6N15	Devers-El Casco	Devers-San Bernardino	Proposed	LST	165
6N14	Devers-El Casco	Devers-San Bernardino	Proposed	LST	140
6N13	Devers-El Casco	Devers-San Bernardino	Proposed	LST	127
6N12	Devers-El Casco	Devers-San Bernardino	Proposed	LST	153
6N11	Devers-El Casco	Devers-San Bernardino	Proposed	LST	130
6N10	Devers-El Casco	Devers-San Bernardino	Proposed	LST	137
M8-T1	Devers-El Casco	Devers-Vista No.2	Remove	LST	138
M7-T4	Devers-El Casco	Devers-Vista No.2	Remove	LST	129
M7-T3	Devers-El Casco	Devers-Vista No.2	Remove	LST	137
M7-T2	Devers-El Casco	Devers-Vista No.2	Remove	LST	128
M7-T1	Devers-El Casco	Devers-Vista No.2	Remove	LST	146
M6-T3	Devers-El Casco	Devers-Vista No.2	Remove	LST	155
M6-T2	Devers-El Casco	Devers-Vista No.2	Remove	LST	149
M6-T1	Devers-El Casco	Devers-Vista No.2	Remove	LST	159
M5-T3	Devers-El Casco	Devers-Vista No.2	Remove	LST	150
M5-T2	Devers-El Casco	Devers-Vista No.2	Remove	LST	156
M5-T1(1)	Devers-El Casco	Devers-Vista No.2	Remove	LST	139
M4-T3	Devers-El Casco	Devers-Vista No.2	Remove	LST	118
M4-T2	Devers-El Casco	Devers-Vista No.2	Remove	LST	119
M4-T1	Devers-El Casco	Devers-Vista No.2	Remove	LST	129
M3-T2	Devers-El Casco	Devers-Vista No.2	Remove	LST	116
M3-T1(1)	Devers-El Casco	Devers-Vista No.2	Remove	LST	139
M2-T4(1)	Devers-El Casco	Devers-Vista No.2	Remove	LST	135
M2-T3(1)	Devers-El Casco	Devers-Vista No.2	Remove	LST	138
M2-T2(1)	Devers-El Casco	Devers-Vista No.2	Remove	LST	137
M2-T1(1)	Devers-El Casco	Devers-Vista No.2	Remove	LST	129
M1-T4(1)	Devers-El Casco	Devers-Vista No.2	Remove	LST	137
M1-T3(1)	Devers-El Casco	Devers-Vista No.2	Remove	LST	134
M1-T2(1)	Devers-El Casco	Devers-Vista No.2	Remove	LST	146
M1-T1(1)	Devers-El Casco	Devers-Vista No.2	Remove	LST	140
M0-T5(1)	Devers-El Casco	Devers-Vista No.2	Remove	LST	146
M0-T4(1)	Devers-El Casco	Devers-Vista No.2	Remove	LST	150
M0-T3(1)	Devers-El Casco	Devers-Vista No.2	Remove	LST	163
M0-T2A	Devers-El Casco	Devers-Vista No.2	Remove	LST	165
M0-T2(1)	Devers-El Casco	Devers-Vista No.2	Modify	LST	154

Table Ap.1A-6. Structure Heights – Segment 6

Structure No.	Circuit 1	Circuit 2	Status	Type	Height (feet)
M0-T1(1)	Devers-El Casco	Devers-Vista No.2	Modify	LST	188
M68-T2	Devers-San Bernardino No.1	n/a	Remove	LST	84
M68-T1	Devers-San Bernardino No.1	n/a	Remove	LST	83
M67-T3	Devers-San Bernardino No.1	n/a	Remove	LST	85
M67-T2	Devers-San Bernardino No.1	n/a	Remove	LST	77
M67-T1	Devers-San Bernardino No.1	n/a	Remove	LST	91
M66-T4	Devers-San Bernardino No.1	n/a	Remove	LST	90
M66-T3	Devers-San Bernardino No.1	n/a	Remove	LST	102
M66-T2	Devers-San Bernardino No.1	n/a	Remove	LST	88
M66-T1	Devers-San Bernardino No.1	n/a	Remove	LST	82
M65-T3	Devers-San Bernardino No.1	n/a	Remove	LST	90
M65-T2	Devers-San Bernardino No.1	n/a	Remove	LST	82
M65-T1	Devers-San Bernardino No.1	n/a	Remove	LST	82
M64-T3	Devers-San Bernardino No.1	n/a	Remove	LST	84
M64-T2	Devers-San Bernardino No.1	n/a	Remove	LST	83
M64-T1	Devers-San Bernardino No.1	n/a	Remove	LST	80
M63-T2	Devers-San Bernardino No.1	n/a	Remove	LST	78
M63-T1	Devers-San Bernardino No.1	n/a	Remove	LST	85
M62-T4	Devers-San Bernardino No.1	n/a	Remove	LST	86
M62-T3	Devers-San Bernardino No.1	n/a	Remove	LST	84
M62-T2	Devers-San Bernardino No.1	n/a	Remove	LST	79
M62-T1	Devers-San Bernardino No.1	n/a	Remove	LST	85
M61-T4	Devers-San Bernardino No.1	n/a	Remove	LST	79
M61-T3	Devers-San Bernardino No.1	n/a	Remove	LST	85
M61-T2	Devers-San Bernardino No.1	n/a	Remove	LST	90
M61-T1	Devers-San Bernardino No.1	n/a	Remove	LST	90
M60-T3	Devers-San Bernardino No.1	n/a	Remove	LST	84
M60-T2X	Devers-San Bernardino No.1	n/a	Remove	LST	107
M60-T1X	Devers-Vista No.1	Devers-San Bernardino	Modify	LST	157
M45-T3X	Devers-Vista No.1	Devers-San Bernardino	Modify	LST	157
M45-T2X	Devers-Vista No.1	Devers-San Bernardino	Modify	LST	157
T266	Devers-Vista No.1	n/a	Remove	Wood Pole	86
T265	Devers-Vista No.1	n/a	Remove	Wood Pole	77
T264	Devers-Vista No.1	n/a	Remove	Wood Pole	78
T263	Devers-Vista No.1	n/a	Remove	Wood Pole	80
T262	Devers-Vista No.1	n/a	Remove	Wood Pole	79
T261	Devers-Vista No.1	n/a	Remove	Wood Pole	78
T260	Devers-Vista No.1	n/a	Remove	Wood Pole	79
T259	Devers-Vista No.1	n/a	Remove	Wood Pole	79
T258	Devers-Vista No.1	n/a	Remove	Wood Pole	79

Table Ap.1A-6. Structure Heights – Segment 6

Structure No.	Circuit 1	Circuit 2	Status	Type	Height (feet)
T257	Devers-Vista No.1	n/a	Remove	Wood Pole	79
T256	Devers-Vista No.1	n/a	Remove	Wood Pole	78
T255	Devers-Vista No.1	n/a	Remove	Wood Pole	84
T254	Devers-Vista No.1	n/a	Remove	Wood Pole	105
T253	Devers-Vista No.1	n/a	Remove	Wood Pole	82
T252A	Devers-Vista No.1	n/a	Remove	Wood Pole	81
T252	Devers-Vista No.1	n/a	Remove	Wood Pole	81
T251	Devers-Vista No.1	n/a	Remove	LST	81
T250	Devers-Vista No.1	n/a	Remove	LST	80
T249	Devers-Vista No.1	n/a	Remove	Wood Pole	84
T248	Devers-Vista No.1	n/a	Remove	Wood Pole	74
T247A	Devers-Vista No.1	n/a	Remove	Wood Pole	77
T247	Devers-Vista No.1	n/a	Remove	Wood Pole	82
T246	Devers-Vista No.1	n/a	Remove	Wood Pole	81
T245	Devers-Vista No.1	n/a	Remove	Wood Pole	81
T244	Devers-Vista No.1	n/a	Remove	Wood Pole	77
T243	Devers-Vista No.1	n/a	Remove	Wood Pole	78
T242	Devers-Vista No.1	n/a	Remove	Wood Pole	81
T241	Devers-Vista No.1	n/a	Remove	Wood Pole	80
T240	Devers-Vista No.1	n/a	Remove	Wood Pole	80
T239	Devers-Vista No.1	n/a	Remove	Wood Pole	89
T238	Devers-Vista No.1	n/a	Remove	Wood Pole	89
T237	Devers-Vista No.1	n/a	Remove	Wood Pole	79
T236	Devers-Vista No.1	n/a	Remove	Wood Pole	94
T235	Devers-Vista No.1	n/a	Remove	Wood Pole	82
T234	Devers-Vista No.1	n/a	Remove	Wood Pole	79
T233	Devers-Vista No.1	n/a	Remove	Wood Pole	72
T232	Devers-Vista No.1	n/a	Remove	Wood Pole	83
T231	Devers-Vista No.1	n/a	Remove	Wood Pole	79
T230	Devers-Vista No.1	n/a	Remove	Wood Pole	79
T229	Devers-Vista No.1	n/a	Remove	Wood Pole	78
T228	Devers-Vista No.1	n/a	Remove	Wood Pole	62
T227	Devers-Vista No.1	n/a	Remove	Wood Pole	67
T226	Devers-Vista No.1	n/a	Remove	Wood Pole	80
T225	Devers-Vista No.1	n/a	Remove	Wood Pole	79
T224	Devers-Vista No.1	n/a	Remove	Wood Pole	80
T223	Devers-Vista No.1	n/a	Remove	Wood Pole	79
T222	Devers-Vista No.1	n/a	Remove	Wood Pole	77
T221	Devers-Vista No.1	n/a	Remove	Wood Pole	80
T220A	Devers-Vista No.1	n/a	Remove	Wood Pole	103

Table Ap.1A-6. Structure Heights – Segment 6

Structure No.	Circuit 1	Circuit 2	Status	Type	Height (feet)
T220	Devers-Vista No.1	n/a	Remove	Wood Pole	92
T219	Devers-Vista No.1	n/a	Remove	Wood Pole	78
M45-T1X	Devers-Vista No.1	n/a	Remove	LST	107
4175197E	Devers-Vista No.1	n/a	Remove	TSP	118
4175196E	Devers-Vista No.1	n/a	Remove	TSP	148
4175195E	Devers-Vista No.1	n/a	Remove	TSP	132
4175194E	Devers-Vista No.1	n/a	Remove	TSP	107
4175193E	Devers-Vista No.1	n/a	Remove	TSP	113

Appendix 1B

FAA Hazard Marking Evaluations

Appendix 1B
FAA Hazard Marking Evaluations

Table Ap.1B-1. Preliminary List of Spans Requiring Marker Balls*

Segment 1—None

Segment 2

From Tower	To Tower
2N01	2N02
2N02	2N03
2N03	2N04
2N04	2N06
2N06	2N07
2N07	2N08
2N08	2N10
2N10	2N11
2N11	2N12
2N12	2N14
2N15	2N16
2N17	2N18
2N20	2N18
2N35	2N36

Segment 3

From Tower	To Tower
3N02	3N03
3N15	3N16
3N16	3N17
3N17	3N19
3N20	3N21
3N31	3N32
3N32	3N33
3N35	3N36
3N36	3N37
3N37	3N38
3N39	3N40
3N40	3N41
3N41	3N42
3N42	3N43
3N43	3N44
3N44	3N46
3N02	3N03
3N15	3N16
3N16	3N17
3N17	3N19
3N20	3N21
3N31	3N32
3N32	3N33
3N35	3N36
3N36	3N37
3N37	3N38
3N39	3N40
3N40	3N41
3N41	3N42
3N42	3N43
3N43	3N44
3N44	3N46
3N02	3N03
3N15	3N16
3N16	3N17
3N17	3N19
3N20	3N21
3N31	3N32
3N32	3N33
3N35	3N36
3N36	3N37
3N37	3N38
3N39	3N40
3N40	3N41
3N41	3N42
3N42	3N43

Segment 4

From Tower	To Tower
4N02	4N03
4N03	4N04
4N04	4N05
4N06	4N07
4N12	4N10
4N13	4N12
4N54	4N53
4N54	4N55
4N55	4N56
4N56	4N57
4N57	4N58
4S02	4S03
4S03	4S04
4S04	4S05
4S06	4S07
4S10	4S12
4S12	4S13
4S53	4S54
4S54	4S55
4S55	4S56
4S57	4S58
3S01	3S02

Segment 5

From Tower	To Tower
5N13	5N14
5N49	5N52

Segment 6

From Tower	To Tower
6S27	6S28
6S28	6S28A
6S28A	6S29
6S31	6S31A
6N27	6N28
6N29	6N28
6N29	6N30
6N30	6N31
6N34	6N35
6N35	6N37

Note: Preliminary list of spans requiring marker balls is based on SCE's preliminary engineering where the height from the ground level to OPGW is greater than 200 feet at 25 degrees.

KEY TO CATEGORIES:

No Filing Required – No Airspace Issues
Filing Required – No Airspace Issues
Filing Recommended – Airspace Issues
Filing Required – Airspace Issues

Table Ap.1B-2. Preliminary FAA Evaluation – Segment 1

GEO ID	Structure ID	Latitude (DD)	Longitude (DD)	Site Elevation (ASL)	Structure Height (AGL)	Total Height (AMSL)	Filing Required?	Lighting Expected?	City	Airspace Issues?
1	1W00	34.032277	–117.242039	1652.9	140	1792.9	N	N	Loma Linda	
2	1W01	34.03212	–117.241599	1640.8	105	1745.8	N	N	Loma Linda	
3	1E03	34.036222	–117.239318	1571.3	116	1687.3	N	N	Loma Linda	
4	1W03	34.036203	–117.239533	1563.6	128	1691.6	N	N	Loma Linda	
5	1E04	34.039315	–117.23937	1302.3	177	1479.3	Y	N	Loma Linda	
6	1W04	34.039316	–117.239552	1303.3	179	1482.3	Y	N	Loma Linda	
7	1E05	34.04167	–117.239386	1267.8	138	1405.4	Y	N	Loma Linda	
8	1W05	34.04167	–117.239552	1268.1	139	1406.7	Y	N	Loma Linda	
9	1E06	34.0433	–117.23939	1253.2	136	1388.8	Y	N	Loma Linda	
10	1W06	34.0433	–117.239556	1254.2	139	1392.8	Y	N	Loma Linda	
11	1E08	34.045586	–117.239396	1223.4	133	1356.0	Y	N	Loma Linda	
12	1W08	34.045586	–117.239562	1223.7	136	1359.3	Y	N	Loma Linda	
13	1E09	34.047257	–117.239401	1204.0	160	1363.6	Y	N	Loma Linda	
14	1W09	34.047257	–117.239566	1202.6	185	1387.2	Y	N	Loma Linda	
15	1E10	34.049595	–117.239376	1175.5	170	1345.5	Y	N	Loma Linda	
16	1W10	34.049594	–117.239574	1175.8	170	1345.8	Y	N	Loma Linda	
17	1E11	34.050737	–117.239413	1165.8	146	1311.8	Y	N	Loma Linda	
18	1W11	34.050736	–117.239578	1165.1	149	1314.1	Y	N	Loma Linda	
19	1E12	34.05287	–117.239421	1151.6	122	1273.6	Y	N	Loma Linda	
20	1W12	34.052869	–117.239586	1150.1	149	1299.1	Y	N	Loma Linda	
21	1E13	34.054614	–117.239427	1146.2	116	1262.2	Y	N	Loma Linda	

Table Ap.1B-2. Preliminary FAA Evaluation – Segment 1

GEO ID	Structure ID	Latitude (DD)	Longitude (DD)	Site Elevation (ASL)	Structure Height (AGL)	Total Height (AMSL)	Filing Required?	Lighting Expected?	City	Airspace Issues?
22	1W13	34.054625	–117.239592	1144.9	119	1263.9	Y	N	Loma Linda	
23	1E14	34.055811	–117.239194	1143.2	118	1260.8	Y	N	Loma Linda	
24	1W14	34.055832	–117.239356	1142.9	118	1260.5	Y	N	Loma Linda	
25	1E15	34.057104	–117.238941	1138.9	113	1251.9	Y	N	Loma Linda	
26	1W15	34.057102	–117.239106	1138.8	113	1251.8	Y	N	Loma Linda	
27	1E16	34.058635	–117.238947	1137.5	127	1264.1	Y	N	Loma Linda	
28	1W16	34.058635	–117.239112	1137.5	127	1264.1	Y	N	Loma Linda	
29	1E17	34.060679	–117.238954	1132.3	130	1262.3	Y	N	Loma Linda	
30	1W17	34.060678	–117.239119	1131.8	127	1258.3	Y	N	Loma Linda	
31	1E18	34.062565	–117.238828	1128.6	148	1276.6	Y	N	Loma Linda	
32	1W18	34.06256	–117.239109	1128.7	145	1273.3	Y	N	Loma Linda	
33	1E19	34.064351	–117.238795	1125.5	151	1276.1	Y	N	Loma Linda	
34	1W19	34.064349	–117.239094	1124.7	145	1269.3	Y	N	Loma Linda	
35	1E20	34.065848	–117.238821	1122.7	155	1277.7	Y	N	Loma Linda	
36	1W20	34.065849	–117.239118	1122.8	155	1277.8	Y	N	Loma Linda	
37	1E21	34.068326	–117.238822	1120.3	149	1269.3	Y	N	Redlands	
38	1W21	34.068326	–117.23912	1120.6	149	1269.6	Y	N	Redlands	
39	1E22	34.070634	–117.238789	1119.2	130	1248.8	Y	N	Redlands	
40	1W22	34.070633	–117.239086	1118.3	130	1247.9	Y	N	Redlands	
41	1E23	34.072625	–117.238789	1115.9	133	1248.5	Y	N	Redlands	
42	1W23	34.072625	–117.239086	1115.3	133	1247.8	Y	N	Redlands	
43	1E24	34.074933	–117.238788	1115.9	130	1245.5	Y	N	Redlands	
44	1W24	34.074933	–117.239085	1115.4	124	1239.0	Y	N	Redlands	
45	1E25	34.077103	–117.238804	1115.6	140	1255.6	Y	N	Redlands	
46	1W25	34.077103	–117.239086	1115.3	140	1255.3	Y	N	Redlands	
47	1E26	34.078105	–117.238795	1117.8	149	1266.8	Y	N	Redlands	
48	1W26	34.078108	–117.239093	1117.4	140	1257.4	Y	N	Redlands	
49	1E27	34.0784.34	–117.238475	1120.0	134	1254.0	Y	N	Redlands	
50	1E28	34.078436	–117.23831	1119.8	134	1253.8	Y	N	Redlands	

KEY TO CATEGORIES:

No Filing Required – No Airspace Issues

Filing Required – No Airspace Issues

Filing Recommended – Airspace Issues

Filing Required – Airspace Issues

Table Ap.1B-3. Preliminary FAA Evaluation – Segment 2

GEO ID	Structure ID	Latitude (DD)	Longitude (DD)	Site Elevation (ASL)	Structure Height (AGL)	Total Height (AMSL)	Filing Required?	Lighting Expected?	City	Airspace Issues?
1	2N01	34.032286	-117.240149	1619.6	180	1799.6	N	N	Loma Linda	
2	2N02	34.033378	-117.24242	1626.5	170	1796.5	N	N	Loma Linda	
3	2N03	34.034579	-117.245175	1486.5	170	1656.5	N	N	Loma Linda	
4	2N04	34.035515	-117.24756	1560.2	154	1713.8	N	N	Loma Linda	
5	2N06	34.037096	-117.251832	1533.7	170	1703.7	Y	N	Loma Linda	
6	2N07	34.037286	-117.254284	1518.5	145	1663.1	Y	N	Loma Linda	
7	2N08	34.037417	-117.256157	1555.3	118	1672.9	Y	N	Loma Linda	
8	2N10	34.037686	-117.26003	1463.1	160	1622.7	Y	N	Loma Linda	
9	2N11	34.037821	-117.261927	1520.1	136	1655.6	Y	N	Loma Linda	
10	2N12	34.038012	-117.264715	1573.4	134	1707.4	Y	N	Loma Linda	
11	2N14	34.034541	-117.265999	1498.9	110	1608.9	N	N	Loma Linda	
12	2N15	34.034441	-117.26977	1380.0	150	1530.0	N	N	Colton	
13	2N16	34.034349	-117.273254	1395.8	137	1532.4	N	N	Colton	
14	2N17	34.036028	-117.27499	1413.6	155	1568.6	N	N	Colton	
15	2N18	34.039017	-117.278115	1296.2	170	1466.2	N	N	Colton	
16	2N20	34.039622	-117.281655	1150.6	180	1330.6	N	N	Colton	
17	2N21	34.040138	-117.284759	1126.4	172	1298.4	N	N	Colton	
18	2N22	34.041003	-117.288785	1224.8	134	1358.8	N	N	Colton	
19	2N23	34.041896	-117.290752	1222.0	155	1377.2	N	N	Colton	
20	2N25	34.042699	-117.294142	1125.9	154	1279.5	N	N	Colton	

Table Ap.1B-3. Preliminary FAA Evaluation – Segment 2

GEO ID	Structure ID	Latitude (DD)	Longitude (DD)	Site Elevation (ASL)	Structure Height (AGL)	Total Height (AMSL)	Filing Required?	Lighting Expected?	City	Airspace Issues?
21	2N26	34.043625	-117.297899	1043.8	162	1205.8	N	N	Colton	
22	2N28	34.04489	-117.300509	1003.2	155	1158.2	N	N	Colton	
23	2N29	34.045054	-117.302548	999.0	157	1155.6	N	N	Colton	
24	2N30	34.045199	-117.304364	1026.0	131	1157.0	N	N	Colton	
25	2N31	34.045489	-117.307447	1014.9	145	1159.9	N	N	Colton	
26	2N32	34.045578	-117.308685	972.5	157	1129.2	N	N	Colton	
27	2N33	34.044714	-117.312493	927.5	157	1084.5	N	N	Colton	
28	2N34	34.044181	-117.314767	923.0	175	1097.6	N	N	Colton	
29	2N35	34.043647	-117.317093	919.1	152	1071.1	N	N	Colton	
30	2N36	34.041843	-117.317679	1052.8	147	1199.3	N	N	Grand Terrace	
31	2N37	34.041971	-117.31868	1040.5	160	1200.5	N	N	Grand Terrace	
32	2N38	34.042026	-117.318673	1041.1	160	1201.1	N	N	Grand Terrace	

KEY TO CATEGORIES:

No Filing Required – No Airspace Issues
Filing Required – No Airspace Issues
Filing Recommended – Airspace Issues
Filing Required – Airspace Issues

Table Ap.1B-4. Preliminary FAA Evaluation – Segment 3

GEO ID	Structure ID	Latitude (DD)	Longitude (DD)	Site Elevation (ASL)	Structure Height (AGL)	Total Height (AMSL)	Filing Required?	Lighting Expected?	City	Airspace Issues?
1	3N01	33.967895	–117.077827	2054.9	132	2187.4	N	N	Redlands	
2	3S01	33.964347	–117.074231	2128.7	175	2303.7	N	N	Redlands	
3	3N02	33.968226	–117.07793	2052.5	129	2181.9	N	N	Redlands	
4	3S02	33.964002	–117.076656	2249.1	125	2374.1	N	N	Redlands	
5	3N03	33.967288	–117.080878	2221.8	140	2361.4	N	N	Redlands	
6	3S03	33.963828	–117.07908	2179.1	160	2339.1	N	N	Redlands	
7	3N04	33.96645	–117.083311	2255.8	119	2374.8	N	N	Redlands	
8	3S04	33.963184	–117.082402	2297.5	182	2479.3	N	N	Redlands	
9	3N06	33.965272	–117.086791	2085.3	113	2198.3	N	N	Redlands	
10	3S06	33.964433	–117.085557	2094.0	182	2276.0	N	N	Redlands	
11	3N07	33.965985	–117.088829	2083.6	175	2258.1	N	N	Redlands	
12	3S07	33.965811	–117.088931	2087.1	182	2269.1	N	N	Redlands	
13	3N08	33.966761	–117.090865	2175.3	148	2322.9	N	N	Redlands	
14	3S08	33.966636	–117.090934	2177.3	154	2330.9	N	N	Redlands	
15	3N10	33.968133	–117.094449	2134.0	160	2293.6	N	N	Redlands	
16	3S10	33.968037	–117.09461	2128.6	185	2313.2	N	N	Redlands	
17	3N12	33.969497	–117.097973	2095.3	160	2254.9	N	N	Redlands	
18	3S12	33.969435	–117.098286	2098.2	127	2224.8	N	N	Redlands	
19	3N13	33.970572	–117.100872	1998.5	162	2160.1	N	N	Redlands	
20	3S13	33.970447	–117.100941	1999.6	175	2174.2	N	N	Redlands	
21	3N14	33.971471	–117.103236	1992.1	148	2139.7	N	N	Redlands	

Table Ap.1B-4. Preliminary FAA Evaluation – Segment 3

GEO ID	Structure ID	Latitude (DD)	Longitude (DD)	Site Elevation (ASL)	Structure Height (AGL)	Total Height (AMSL)	Filing Required?	Lighting Expected?	City	Airspace Issues?
22	3S14	33.971346	–117.103304	1995.4	142	2137.0	N	N	Redlands	
23	3N15	33.972492	–117.105908	1977.3	160	2136.9	N	N	Redlands	
24	3S15	33.972367	–117.105976	1980.7	185	2165.3	N	N	Redlands	
25	3N16	33.973531	–117.108625	2089.3	120	2209.3	N	N	Redlands	
26	3S16	33.973318	–117.10864	2099.0	150	2249.0	N	N	Redlands	
27	3N17	33.974642	–117.112434	2092.5	155	2247.5	N	N	Redlands	
28	3S17	33.974526	–117.112529	2109.2	162	2271.2	N	N	Redlands	
29	3N19	33.975885	–117.116903	2085.0	118	2202.6	N	N	Redlands	
30	3S19	33.975745	–117.117048	2094.1	118	2211.6	N	N	Redlands	
31	3N20	33.97647	–117.118983	2056.7	124	2180.2	N	N	Redlands	
32	3S20	33.97626	–117.118827	2073.9	124	2197.5	N	N	Redlands	
33	3N21	33.977559	–117.122666	1931.0	125	2056.0	N	N	Redlands	
34	3S21	33.9774	–117.12271	1945.8	160	2105.8	N	N	Redlands	
35	3N22	33.978275	–117.124837	1862.8	172	2034.8	N	N	Redlands	
36	3S22	33.978121	–117.124905	1866.7	182	2048.7	N	N	Redlands	
37	3N23	33.979106	–117.127769	1884.1	130	2013.6	N	N	Redlands	
38	3S23	33.978999	–117.127958	1896.9	154	2050.4	N	N	Redlands	
39	3N24	33.979939	–117.130716	1831.2	180	2010.8	N	N	Redlands	
40	3S24	33.979808	–117.130769	1832.8	157	1989.3	N	N	Redlands	
41	3N25	33.980772	–117.133662	1846.9	133	1979.5	N	N	Redlands	
42	3S25	33.980642	–117.133715	1854.3	121	1974.9	N	N	Redlands	
43	3N26	33.981526	–117.136327	1817.0	145	1962.0	N	N	Redlands	
44	3S26	33.981389	–117.136359	1819.8	135	1954.8	N	N	Redlands	
45	3N27	33.982122	–117.138784	1810.3	139	1948.9	N	N	Redlands	
46	3S27	33.981992	–117.138838	1826.2	139	1964.8	N	N	Redlands	
47	3N28	33.982953	–117.14207	1824.3	139	1963.3	N	N	Redlands	
48	3S28	33.982811	–117.142105	1826.7	151	1977.7	N	N	Redlands	
49	3N29	33.984484	–117.145195	1735.8	175	1910.4	N	N	Redlands	
50	3S29	33.984353	–117.145256	1739.1	185	1923.6	N	N	Redlands	

Table Ap.1B-4. Preliminary FAA Evaluation – Segment 3

GEO ID	Structure ID	Latitude (DD)	Longitude (DD)	Site Elevation (ASL)	Structure Height (AGL)	Total Height (AMSL)	Filing Required?	Lighting Expected?	City	Airspace Issues?
51	3N31	33.985821	–117.147887	1828.1	118	1945.7	N	N	Redlands	
52	3S31	33.985675	–117.147941	1838.4	118	1956.0	N	N	Redlands	
53	3N32	33.987021	–117.150257	1875.2	127	2001.8	N	N	Redlands	
54	3S32	33.986836	–117.150239	1895.8	118	2013.3	N	N	Redlands	
55	3N33	33.987924	–117.152127	1837.2	175	2011.8	N	N	Redlands	
56	3S33	33.987796	–117.152221	1849.9	185	2034.5	N	N	Redlands	
57	3N35	33.990664	–117.157604	1887.0	120	2007.0	N	N	Redlands	
58	3S35	33.99054	–117.157683	1893.8	120	2013.8	N	N	Redlands	
59	3N36	33.992475	–117.161201	1751.0	185	1935.6	N	N	Redlands	
60	3S36	33.992303	–117.161211	1761.3	185	1945.9	N	N	Redlands	
61	3N37	33.993734	–117.163732	1797.2	133	1929.7	N	N	Redlands	
62	3S37	33.993534	–117.163714	1831.3	130	1960.9	N	N	Redlands	
63	3N38	33.995462	–117.167234	1844.0	118	1961.6	N	N	Redlands	
64	3S38	33.995345	–117.167322	1843.3	118	1960.9	N	N	Redlands	
65	3N39	33.996602	–117.16941	1808.2	134	1942.2	N	N	Redlands	
66	3S39	33.996436	–117.169404	1815.4	122	1937.4	N	N	Redlands	
67	3N40	33.999038	–117.174101	1890.1	130	2019.7	N	N	Redlands	
68	3S40	33.998922	–117.174188	1895.0	130	2024.6	N	N	Redlands	
69	3N41	34.000434	–117.176755	1772.5	182	1954.5	N	N	Redlands	
70	3S41	34.000293	–117.176857	1780.2	184	1964.2	N	N	Redlands	
71	3N42	34.002392	–117.18053	1901.7	118	2019.2	N	N	Redlands	
72	3S42	34.002304	–117.180703	1913.9	118	2031.4	N	N	Redlands	
73	3N43	34.003102	–117.181904	1900.4	124	2024.0	N	N	Redlands	
74	3S43	34.002945	–117.181933	1902.6	118	2020.2	N	N	Redlands	
75	3N44	34.004732	–117.185042	1818.3	160	1977.9	N	N	Redlands	
76	3S44	34.004546	–117.185019	1818.0	175	1992.5	N	N	Redlands	
77	3N46	34.006632	–117.188721	1745.4	124	1869.0	N	N	Redlands	
78	3S46	34.006515	–117.188809	1750.8	118	1868.3	N	N	Redlands	
79	3N48	34.008839	–117.192941	1672.2	115	1787.2	N	N	Redlands	

Table Ap.1B-4. Preliminary FAA Evaluation – Segment 3

GEO ID	Structure ID	Latitude (DD)	Longitude (DD)	Site Elevation (ASL)	Structure Height (AGL)	Total Height (AMSL)	Filing Required?	Lighting Expected?	City	Airspace Issues?
80	3S48	34.008705	–117.193056	1675.6	115	1790.6	N	N	Redlands	
81	3N50	34.01134	–117.197758	1695.8	165	1860.8	N	N	Redlands	
82	3S50	34.011235	–117.197929	1700.0	160	1860.0	N	N	Redlands	
83	3N51	34.013615	–117.202191	1664.8	185	1849.4	N	N	Redlands	
84	3S51	34.013492	–117.202265	1668.5	185	1853.0	N	N	Redlands	
85	3N53	34.015257	–117.205335	1594.4	136	1729.9	N	N	Redlands	
86	3S53	34.015141	–117.205422	1590.3	145	1734.9	N	N	Redlands	
87	3N54	34.016287	–117.207321	1526.4	175	1700.9	N	N	Redlands	
88	3S54	34.016171	–117.207408	1531.3	157	1687.9	N	N	Redlands	
89	3N55	34.018093	–117.2108	1587.3	131	1718.3	N	N	Redlands	
90	3S55	34.017974	–117.210883	1589.7	125	1714.7	N	N	Redlands	
91	3N56	34.0192	–117.212934	1603.3	121	1723.9	N	N	Redlands	
92	3S56	34.019084	–117.213023	1608.4	118	1725.9	N	N	Redlands	
93	3N57	34.02045	–117.215357	1594.7	160	1754.3	N	N	Redlands	
94	3S57	34.02032	–117.215445	1601.5	160	1761.0	N	N	Redlands	
95	3N59	34.022724	–117.219724	1604.3	162	1765.9	N	N	Redlands	
96	3S59	34.022607	–117.219811	1610.1	162	1771.7	N	N	Redlands	
97	3N60	34.024297	–117.222757	1588.9	157	1745.5	N	N	Redlands	
98	3S60	34.024179	–117.222843	1594.0	151	1744.6	N	N	Redlands	
99	3N61	34.025608	–117.225287	1620.5	160	1780.1	N	N	Redlands	
100	3S61	34.025491	–117.225374	1630.0	175	1804.6	N	N	Redlands	
101	3N62	34.026934	–117.22788	1653.9	151	1804.4	N	N	Redlands	
102	3S62	34.026819	–117.227968	1646.5	160	1806.1	N	N	Redlands	
103	3N63	34.029246	–117.232342	1673.7	118	1791.7	N	N	Redlands	
104	3S63	34.029089	–117.232412	1688.6	115	1803.6	N	N	Redlands	
105	3N64	34.0304	–117.235307	1598.0	162	1759.5	N	N	Redlands	
106	3S64	34.030264	–117.235357	1598.4	185	1782.9	N	N	Redlands	
107	3N65	34.031533	–117.238345	1606.6	140	1746.6	N	N	Redlands	
108	3S65	34.031334	–117.23829	1608.3	182	1790.3	N	N	Redlands	

KEY TO CATEGORIES:

No Filing Required – No Airspace Issues
Filing Required – No Airspace Issues
Filing Recommended – Airspace Issues
Filing Required – Airspace Issues

Table Ap.1B-5. Preliminary FAA Evaluation – Segment 4

GEO ID	Structure ID	Latitude (DD)	Longitude (DD)	Site Elevation (ASL)	Structure Height (AGL)	Total Height (AMSL)	Filing Required?	Lighting Expected?	City	Airspace Issues?
1	4N01	33.947459	–116.87802	2689.7	160	2849.7	N	N	Banning	
2	4S01	33.947319	–116.878021	2686.7	170	2856.7	N	N	Banning	
3	4N02	33.947563	–116.880546	2805.0	150	2955.0	N	N	Banning	
4	4S02	33.947415	–116.880457	2798.4	180	2978.4	N	N	Banning	
5	4N03	33.947477	–116.885085	2892.8	154	3046.8	N	N	Banning	
6	4S03	33.94734	–116.885071	2888.0	165	3053.0	N	N	Banning	
7	4N04	33.947003	–116.890367	2851.5	190	3041.5	N	N	Banning	
8	4S04	33.946865	–116.890352	2845.8	190	3035.8	N	N	Banning	
9	4N05	33.946484	–116.894989	3027.4	125	3152.4	N	N	Banning	
10	4S05	33.946318	–116.894808	3025.7	125	3150.7	N	N	Banning	
11	4N06	33.94646	–116.897787	3012.1	142	3153.7	Y	N	Banning	
12	4S06	33.946323	–116.89779	3010.1	160	3169.7	Y	N	Banning	
13	4N07	33.946464	–116.900948	2950.1	133	3082.7	Y	N	Banning	
14	4S07	33.946326	–116.900948	2949.6	127	3076.2	Y	N	Banning	
15	4N08	33.94647	–116.904055	2978.2	122	3100.2	Y	N	Banning	
16	4S08	33.946332	–116.904055	2978.1	116	3094.1	Y	N	Banning	
17	4N09	33.946473	–116.907168	2987.2	175	3161.8	Y	N	Banning	
18	4S09	33.946336	–116.907168	2985.6	160	3145.2	Y	N	Banning	
19	4N10	33.946476	–116.910055	3039.2	113	3152.2	Y	N	Banning	
20	4S10	33.946339	–116.910055	3037.0	116	3153.0	Y	N	Banning	
21	4N12	33.946564	–116.915264	2927.9	138	3065.9	Y	N	Banning	

Table Ap.1B-5. Preliminary FAA Evaluation – Segment 4

GEO ID	Structure ID	Latitude (DD)	Longitude (DD)	Site Elevation (ASL)	Structure Height (AGL)	Total Height (AMSL)	Filing Required?	Lighting Expected?	City	Airspace Issues?
22	4S12	33.946418	–116.915236	2936.2	130	3066.2	Y	N	Banning	
23	4N13	33.946681	–116.918018	2948.7	126	3074.2	Y	N	Banning	
24	4S13	33.946543	–116.918015	2941.1	113	3054.1	Y	N	Banning	
25	4N14	33.946657	–116.920971	2785.2	163	2947.8	N	N	Banning	
26	4S14	33.94652	–116.920969	2781.9	160	2941.5	N	N	Banning	
27	4N15	33.946573	–116.924113	2740.4	124	2864.0	N	N	Banning	
28	4S15	33.946436	–116.924113	2738.9	130	2868.5	N	N	Banning	
29	4N16	33.946492	–116.927133	2706.0	127	2832.6	N	N	Banning	
30	4S16	33.946354	–116.927133	2703.8	127	2830.4	N	N	Banning	
31	4N17	33.946486	–116.930168	2701.1	133	2833.7	N	N	Banning	
32	4S17	33.946349	–116.930168	2698.9	136	2834.5	N	N	Banning	
33	4N18	33.946482	–116.933257	2692.5	133	2825.1	N	N	Banning	
34	4S18	33.946345	–116.933257	2690.7	133	2823.3	N	N	Banning	
35	4N19	33.946479	–116.936301	2682.2	127	2808.8	N	N	Banning	
36	4S19	33.946341	–116.936301	2680.4	130	2810.0	N	N	Banning	
37	4N20	33.946475	–116.939238	2686.2	130	2815.8	N	N	Banning	
38	4S20	33.946338	–116.939231	2685.1	127	2811.7	N	N	Banning	
39	4N21	33.946471	–116.942402	2694.0	136	2829.6	N	N	Banning	
40	4S21	33.946333	–116.942401	2692.0	139	2830.6	N	N	Banning	
41	4N22	33.946482	–116.945456	2695.1	127	2821.7	N	N	Banning	
42	4S22	33.946345	–116.94546	2693.7	124	2817.3	N	N	Banning	
43	4N23	33.946544	–116.948596	2698.4	134	2832.4	N	N	Beaumont	
44	4S23	33.946407	–116.94862	2698.3	137	2835.3	N	N	Beaumont	
45	4N24	33.947443	–116.952444	2708.5	160	2868.1	N	N	Beaumont	
46	4S24	33.94731	–116.952486	2707.4	154	2861.0	N	N	Beaumont	
47	4N25	33.948324	–116.956369	2711.5	145	2856.5	N	N	Beaumont	
48	4S25	33.948179	–116.956391	2710.9	151	2861.9	N	N	Beaumont	
49	4N26	33.948744	–116.960505	2706.8	175	2881.4	N	N	Beaumont	
50	4S26	33.948606	–116.96052	2706.0	166	2871.6	N	N	Beaumont	

Table Ap.1B-5. Preliminary FAA Evaluation – Segment 4

GEO ID	Structure ID	Latitude (DD)	Longitude (DD)	Site Elevation (ASL)	Structure Height (AGL)	Total Height (AMSL)	Filing Required?	Lighting Expected?	City	Airspace Issues?
51	4N27	33.949217	–116.965037	2698.6	175	2873.2	N	N	Beaumont	
52	4S27	33.949081	–116.965065	2697.1	160	2856.7	N	N	Beaumont	
53	4N29	33.949707	–116.969551	2679.9	175	2854.5	N	N	Beaumont	
54	4S29	33.949571	–116.969573	2679.5	175	2854.1	N	N	Beaumont	
55	4N30	33.950126	–116.973475	2660.9	130	2790.9	N	N	Beaumont	
56	4S30	33.949989	–116.973474	2660.0	142	2802.0	N	N	Beaumont	
57	4N31	33.950117	–116.976714	2642.9	130	2772.5	N	N	Beaumont	
58	4S31	33.94998	–116.976718	2643.4	128	2771.0	N	N	Beaumont	
59	4N32	33.95011	–116.979725	2624.5	160	2784.1	N	N	Beaumont	
60	4S32	33.949972	–116.979735	2623.7	160	2783.3	N	N	Beaumont	
61	4N34	33.950108	–116.983612	2625.4	155	2780.4	N	N	Beaumont	
62	4S34	33.949943	–116.983615	2626.2	155	2781.2	N	N	Beaumont	
63	4N35	33.950899	–116.98724	2580.6	160	2740.2	N	N	Beaumont	
64	4S35	33.950767	–116.987287	2579.7	180	2759.3	N	N	Beaumont	
65	4N36	33.951606	–116.989905	2608.7	136	2744.3	N	N	Beaumont	
66	4S36	33.951475	–116.989955	2612.4	127	2739.0	N	N	Beaumont	
67	4N37	33.952544	–116.993678	2597.6	175	2772.2	N	N	Beaumont	
68	4S37	33.952411	–116.993724	2592.3	175	2766.9	N	N	Beaumont	
69	4N38	33.95367	–116.998249	2584.4	175	2759.0	N	N	Beaumont	
70	4S38	33.953538	–116.998296	2583.3	175	2757.9	N	N	Beaumont	
71	4N39	33.95462	–117.002112	2565.9	136	2701.5	N	N	Beaumont	
72	4S39	33.954489	–117.002159	2565.5	139	2704.1	N	N	Beaumont	
73	4N40	33.955226	–117.004573	2564.7	127	2691.3	N	N	Beaumont	
74	4S40	33.955095	–117.00462	2564.1	121	2684.7	N	N	Beaumont	
75	4N41	33.956027	–117.007819	2556.0	154	2709.6	N	N	Beaumont	
76	4S41	33.955896	–117.007866	2555.3	157	2711.9	N	N	Beaumont	
77	4N42	33.957046	–117.011959	2535.1	151	2685.7	N	N	Beaumont	
78	4S42	33.956914	–117.012006	2532.5	154	2686.1	N	N	Beaumont	
79	4N43	33.957934	–117.01555	2519.4	162	2681.0	N	N	Beaumont	

Table Ap.1B-5. Preliminary FAA Evaluation – Segment 4

GEO ID	Structure ID	Latitude (DD)	Longitude (DD)	Site Elevation (ASL)	Structure Height (AGL)	Total Height (AMSL)	Filing Required?	Lighting Expected?	City	Airspace Issues?
80	4S43	33.957802	–117.015598	2518.8	175	2693.4	N	N	Beaumont	
81	4N44	33.958926	–117.019807	2493.6	155	2648.6	N	N	Beaumont	
82	4S44	33.958764	–117.019842	2493.8	149	2642.8	N	N	Beaumont	
83	4N45	33.959686	–117.024145	2466.0	155	2621.0	N	N	Calimesa	
84	4S45	33.959523	–117.024184	2466.8	155	2621.8	N	N	Calimesa	
85	4N46	33.960374	–117.028006	2442.6	145	2587.2	N	N	Calimesa	
86	4S46	33.960239	–117.028038	2442.5	154	2596.1	N	N	Calimesa	
87	4N47	33.96082	–117.030641	2423.8	160	2583.4	N	N	Calimesa	
88	4S47	33.960686	–117.030676	2416.0	157	2572.6	N	N	Calimesa	
89	4N48	33.961456	–117.034189	2403.5	180	2583.1	N	N	Calimesa	
90	4S48	33.961329	–117.034218	2403.4	180	2583.0	N	N	Calimesa	
91	4N50	33.962373	–117.039602	2371.8	175	2546.4	N	N	Calimesa	
92	4S50	33.962238	–117.039633	2378.6	175	2553.2	N	N	Calimesa	
93	4N51	33.962998	–117.04319	2359.9	175	2534.5	N	N	Calimesa	
94	4S51	33.962865	–117.043225	2348.2	157	2504.8	N	N	Calimesa	
95	4N52	33.963361	–117.045407	2382.6	139	2521.2	N	N	Calimesa	
96	4S52	33.963227	–117.04544	2372.4	136	2508.0	N	N	Calimesa	
97	4N53	33.963782	–117.047795	2380.8	145	2525.8	N	N	Calimesa	
98	4S53	33.963634	–117.047834	2374.3	145	2519.3	N	N	Calimesa	
99	4N54	33.964353	–117.051258	2423.5	154	2577.1	N	N	Calimesa	
100	4S54	33.96422	–117.051296	2428.7	154	2582.3	N	N	Calimesa	
101	4N55	33.964967	–117.05488	2421.0	157	2578.0	N	N	Calimesa	
102	4S55	33.964831	–117.054996	2417.7	148	2565.7	N	N	Calimesa	
103	4N56	33.965611	–117.058414	2388.2	176	2563.7	N	N	Calimesa	
104	4S56	33.965381	–117.058529	2413.5	128	2541.5	N	N	Calimesa	
105	4N57	33.966479	–117.060519	2403.0	119	2522.0	N	N	Calimesa	
106	4S57	33.96615	–117.060479	2384.7	128	2512.7	N	N	Calimesa	
107	4N58	33.966625	–117.062379	2360.1	125	2485.1	N	N	Calimesa	
108	4S58	33.965923	–117.064407	2339.7	139	2478.7	N	N	Calimesa	

Table Ap.1B-5. Preliminary FAA Evaluation – Segment 4

GEO ID	Structure ID	Latitude (DD)	Longitude (DD)	Site Elevation (ASL)	Structure Height (AGL)	Total Height (AMSL)	Filing Required?	Lighting Expected?	City	Airspace Issues?
109	4N59	33.967339	–117.065149	2127.5	125	2252.5	N	N	Calimesa	
110	4S59	33.965526	–117.066882	2225.1	147	2372.1	N	N	Calimesa	
111	4N60	33.968069	–117.068416	2076.3	136	2211.9	N	N	Calimesa	
112	4S60	33.965079	–117.069671	2095.4	175	2270.4	N	N	Calimesa	
113	4N61	33.968833	–117.071299	2066.6	142	2208.2	N	N	Calimesa	
114	4N62	33.969602	–117.073962	2068.6	125	2193.6	N	N	Calimesa	
115	4N63	33.968803	–117.076351	2043.1	134	2177.1	N	N	Calimesa	
116	4N64	33.968388	–117.077607	2045.8	134	2179.8	N	N	Calimesa	
117	4N65	33.967898	–117.077088	2055.0	132	2187.3	N	N	Calimesa	

KEY TO CATEGORIES:

No Filing Required – No Airspace Issues
Filing Required – No Airspace Issues
Filing Recommended – Airspace Issues
Filing Required – Airspace Issues

Table Ap.1B-6. Preliminary FAA Evaluation – Segment 5

GEO ID	Structure ID	Latitude (DD)	Longitude (DD)	Site Elevation (ASL)	Structure Height (AGL)	Total Height (AMSL)	Filing Required?	Lighting Expected?	City	Airspace Issues?
1	5N01	33.932972	-116.721436	1663.2	121	1784.2	N	N	White Water	
2	5S01	33.932835	-116.721436	1659.6	140	1799.6	N	N	White Water	
3	5N02	33.932986	-116.724416	1662.2	142	1803.8	N	N	White Water	
4	5S02	33.932849	-116.724417	1659.1	142	1800.7	N	N	White Water	
5	5N03	33.933002	-116.728162	1641.5	151	1792.1	N	N	White Water	
6	5S03	33.932865	-116.728162	1639.7	151	1790.3	N	N	White Water	
7	5N04	33.933001	-116.731932	1668.5	148	1816.1	N	N	White Water	
8	5S04	33.932864	-116.731932	1666.1	148	1813.7	N	N	White Water	
9	5N05	33.933002	-116.73571	1685.9	151	1836.4	N	N	White Water	
10	5S05	33.932865	-116.735711	1682.9	154	1836.5	N	N	White Water	
11	5N06	33.932975	-116.739033	1705.8	137	1842.4	N	N	White Water	
12	5S06	33.932837	-116.739031	1702.8	145	1847.4	N	N	White Water	
13	5N07	33.932949	-116.742295	1695.4	185	1880.0	N	N	White Water	
14	5S07	33.932812	-116.742295	1691.9	185	1876.5	N	N	White Water	
15	5N08	33.932934	-116.745216	1824.1	148	1971.7	N	N	White Water	
16	5S08	33.932796	-116.745215	1812.7	154	1966.3	N	N	White Water	
17	5N09	33.932965	-116.748039	1815.6	177	1992.2	N	N	Cabazon	
18	5S09	33.932828	-116.748039	1814.8	180	1994.4	N	N	Cabazon	
19	5N10	33.932976	-116.750767	1863.4	142	2005.0	N	N	Cabazon	
20	5S10	33.932839	-116.750765	1869.7	145	2014.3	N	N	Cabazon	
21	5N11	33.932993	-116.754873	1862.6	160	2022.2	N	N	Cabazon	

Table Ap.1B-6. Preliminary FAA Evaluation – Segment 5

GEO ID	Structure ID	Latitude (DD)	Longitude (DD)	Site Elevation (ASL)	Structure Height (AGL)	Total Height (AMSL)	Filing Required?	Lighting Expected?	City	Airspace Issues?
22	5S11	33.932856	-116.754873	1859.7	160	2019.2	N	N	Cabazon	
23	5N12	33.932995	-116.758752	1839.7	130	1969.3	N	N	Cabazon	
24	5S12	33.932857	-116.758751	1838.9	130	1968.5	N	N	Cabazon	
25	5N13	33.932979	-116.762089	1853.9	175	2028.5	N	N	Cabazon	
26	5S13	33.932842	-116.762088	1850.9	175	2025.5	N	N	Cabazon	
27	5N14	33.932966	-116.766936	1940.7	160	2100.3	N	N	Cabazon	
28	5S14	33.932829	-116.766933	1929.7	160	2089.3	N	N	Cabazon	
29	5N15	33.932925	-116.770946	1915.5	182	2097.1	N	N	Cabazon	
30	5S15	33.932787	-116.770943	1914.4	180	2094.0	N	N	Cabazon	
31	5N16	33.932845	-116.774913	1956.8	157	2113.4	N	N	Cabazon	
32	5S16	33.932708	-116.774901	1955.6	160	2115.1	N	N	Cabazon	
33	5N17	33.932661	-116.778822	2000.9	148	2148.5	N	N	Cabazon	
34	5S17	33.932523	-116.778813	2000.7	148	2148.3	N	N	Cabazon	
35	5N18	33.932457	-116.783057	2053.8	175	2228.3	N	N	Cabazon	
36	5S18	33.932319	-116.783043	2051.8	175	2226.4	N	N	Cabazon	
37	5N19	33.932239	-116.787579	2104.5	175	2279.1	N	N	Cabazon	
38	5S19	33.932101	-116.787569	2101.3	175	2275.9	N	N	Cabazon	
39	5N20	33.932141	-116.791803	2136.1	145	2280.7	Y	N	Cabazon	
40	5S20	33.932003	-116.791797	2134.0	145	2278.6	Y	N	Cabazon	
41	5N21	33.932114	-116.794925	2145.6	151	2296.2	Y	N	Cabazon	
42	5S21	33.931975	-116.794926	2143.1	151	2293.7	Y	N	Cabazon	
43	5N22	33.932116	-116.799331	2164.0	175	2338.6	Y	N	Cabazon	
44	5S22	33.931978	-116.79933	2161.4	175	2335.9	Y	N	Cabazon	
45	5N23	33.932123	-116.804073	2160.8	180	2340.4	Y	N	Cabazon	
46	5S23	33.931986	-116.804073	2156.8	180	2336.3	Y	N	Cabazon	
47	5N24	33.932131	-116.808976	2148.1	175	2322.7	Y	N	Cabazon	
48	5S24	33.931993	-116.808975	2145.7	175	2320.3	Y	N	Cabazon	
49	5N27	33.932138	-116.813895	2092.9	180	2272.5	Y	N	Cabazon	
50	5S27	33.932001	-116.813894	2091.5	180	2271.0	Y	N	Cabazon	

Table Ap.1B-6. Preliminary FAA Evaluation – Segment 5

GEO ID	Structure ID	Latitude (DD)	Longitude (DD)	Site Elevation (ASL)	Structure Height (AGL)	Total Height (AMSL)	Filing Required?	Lighting Expected?	City	Airspace Issues?
51	5N28	33.93214	-116.817515	2089.8	145	2234.3	Y	N	Cabazon	
52	5S28	33.931999	-116.817515	2089.0	145	2233.6	Y	N	Cabazon	
53	5N29	33.932173	-116.821354	2069.3	155	2224.3	Y	N	Cabazon	
54	5S29	33.932026	-116.821419	2066.8	155	2221.8	Y	N	Cabazon	
55	5N30	33.933857	-116.823955	2087.2	146	2233.2	Y	N	Cabazon	
56	5S30	33.93372	-116.82401	2085.1	146	2231.1	Y	N	Cabazon	
57	5N31-1	33.933829	-116.826328	2093.9	125	2218.9	Y	N	Cabazon	
58	5S31-1	33.933692	-116.826324	2090.6	125	2215.6	Y	N	Cabazon	
59	5N32-1	33.933789	-116.828809	2099.5	125	2224.5	Y	N	Cabazon	
60	5S32-1	33.933652	-116.828802	2097.3	125	2222.3	Y	N	Cabazon	
61	5N34-1	33.933749	-116.831295	2106.3	120	2226.3	Y	N	Cabazon	
62	5S34-1	33.933612	-116.831291	2106.8	120	2226.8	Y	N	Cabazon	
63	5N35-1	33.933718	-116.834594	2128.8	125	2253.8	Y	N	Cabazon	
64	5S35-1	33.933581	-116.834593	2128.3	125	2253.3	Y	N	Cabazon	
65	5N36-1	33.933715	-116.836957	2144.6	125	2269.6	Y	N	Cabazon	
66	5S36-1	33.933578	-116.836957	2143.2	125	2268.2	Y	N	Cabazon	
67	5N37-1	33.933712	-116.839409	2164.0	120	2284.0	Y	N	Cabazon	
68	5S37-1	33.933574	-116.839408	2161.4	120	2281.4	Y	N	Cabazon	
69	5N38-1	33.933709	-116.84148	2182.0	120	2302.0	Y	N	Cabazon	
70	5S38-1	33.933572	-116.84148	2180.8	120	2300.8	Y	N	Cabazon	
71	5N39-1	33.933722	-116.843566	2201.7	120	2321.7	Y	N	Cabazon	
72	5S39-1	33.933585	-116.843568	2201.3	120	2321.3	Y	N	Cabazon	
73	5N40-1	33.93374	-116.845778	2221.8	120	2341.8	Y	N	Cabazon	
74	5S40-1	33.933602	-116.845779	2220.2	120	2340.2	Y	N	Cabazon	
75	5N41-1	33.933757	-116.848029	2244.1	120	2364.1	Y	N	Cabazon	
76	5S41-1	33.93362	-116.848031	2243.9	120	2363.9	Y	N	Cabazon	
77	**5N42-1**	**33.933774**	**-116.850255**	**2263.0**	**120**	**2383.0**	**Y**	**Y**	**Cabazon**	**BNG VFR Conical Surface by 47'**
78	**5S42-1**	**33.933637**	**-116.850256**	**2263.2**	**120**	**2383.2**	**Y**	**Y**	**Cabazon**	**BNG VFR Conical Surface by 47'**
79	**5N43-1**	**33.933791**	**-116.852393**	**2282.5**	**120**	**2402.5**	**Y**	**Y**	**Cabazon**	**BNG VFR Conical Surface by 64'**

Table Ap.1B-6. Preliminary FAA Evaluation – Segment 5

GEO ID	Structure ID	Latitude (DD)	Longitude (DD)	Site Elevation (ASL)	Structure Height (AGL)	Total Height (AMSL)	Filing Required?	Lighting Expected?	City	Airspace Issues?
80	5S43-1	33.933654	-116.852471	2283.8	120	2403.8	Y	Y	Cabazon	BNG VFR Conical Surface by63'
81	5N44-1	33.935033	-116.853635	2310.1	125	2435.1	Y	Y	Cabazon	BNG VFR Conical Surface by 81'
82	5S44-1	33.934947	-116.853765	2309.8	125	2434.8	Y	Y	Cabazon	BNG VFR Conical Surface by 82'
83	5N44A-1	33.936337	-116.854941	2335.6	120	2455.6	Y	Y	Cabazon	BNG VFR Conical Surface by 93'
84	5S44A-1	33.936249	-116.855069	2336.3	120	2456.3	Y	Y	Cabazon	BNG VFR Conical Surface by 98'
85	5N45-1	33.937659	-116.856266	2360.0	120	2480.0	Y	Y	Cabazon	BNG VFR Conical Surface by 112'
86	5S45-1	33.937571	-116.856393	2360.5	120	2480.5	Y	Y	Cabazon	BNG VFR Conical Surface by 127'
87	5N46-1	33.938981	-116.85759	2385.3	120	2505.3	Y	Y	Cabazon	BNG VFR Conical Surface by 124'
88	5S46-1	33.938894	-116.857718	2383.9	120	2503.9	Y	Y	Cabazon	BNG VFR Conical Surface by 123'
89	5N47-1	33.94031	-116.858921	2412.1	110	2522.1	Y	Y	Cabazon	BNG VFR Conical Surface by 115'
90	5S47-1	33.94023	-116.859056	2413.2	110	2523.2	Y	Y	Cabazon	BNG VFR Conical Surface by 132'
91	5N48	33.941812	-116.860426	2443.2	127	2569.7	Y	Y	Banning	BNG VFR Conical Surface by 114'
92	5S48	33.94172	-116.860549	2443.5	127	2570.1	Y	Y	Banning	BNG VFR Conical Surface by 123'
93	5N49	33.943964	-116.862484	2474.7	180	2654.7	Y	Y	Banning	BNG VFR Conical Surface by 70'
94	5S49	33.943854	-116.862593	2475.1	180	2655.1	Y	Y	Banning	BNG VFR Conical Surface by 86'
95	5N52	33.946982	-116.868816	2587.0	195	2782.0	Y	N	Banning	
96	5S52	33.946846	-116.868867	2587.0	195	2782.0	N	N	Banning	
97	5N54	33.947371	-116.875861	2670.5	195	2865.5	Y	N	Banning	
98	5S54	33.947233	-116.875869	2667.0	195	2862.0	N	N	Banning	

KEY TO CATEGORIES:

No Filing Required – No Airspace Issues
Filing Required – No Airspace Issues
Filing Recommended – Airspace Issues
Filing Required – Airspace Issues

Table Ap.1B-7. Preliminary FAA Evaluation – Segment 6

GEO ID	Structure ID	Latitude (DD)	Longitude (DD)	Site Elevation (ASL)	Structure Height (AGL)	Total Height (AMSL)	Filing Required?	Lighting Expected?	City	Airspace Issues?
1	6N10	33.932294	–116.582936	1070.0	137	1207.0	N	N	Desert Hot Springs	
2	6S10	33.932128	–116.582935	1072.7	137	1209.7	N	N	Desert Hot Springs	
3	6N11	33.932286	–116.585428	1108.5	130	1238.1	N	N	Desert Hot Springs	
4	6S11	33.932122	–116.585429	1105.7	139	1244.3	N	N	Desert Hot Springs	
5	6N12	33.932281	–116.588603	1118.1	153	1270.7	N	N	Desert Hot Springs	
6	6S12	33.932116	–116.588603	1118.4	139	1257.0	N	N	Desert Hot Springs	
7	6N13	33.932275	–116.591775	1103.0	127	1229.5	N	N	Desert Hot Springs	
8	6S13	33.93211	–116.591775	1101.4	133	1234.0	N	N	Desert Hot Springs	
9	6N14	33.932269	–116.594968	1118.1	140	1258.1	N	N	Desert Hot Springs	
10	6S14	33.932104	–116.594949	1115.5	113	1228.5	N	N	Desert Hot Springs	
11	6N15	33.932754	–116.596848	1140.0	165	1305.0	N	N	Desert Hot Springs	
12	6S15	33.931524	–116.596899	1120.8	125	1245.8	N	N	Desert Hot Springs	
13	6N16	33.932753	–116.59993	1170.4	155	1325.4	N	N	Desert Hot Springs	
14	6S16	33.931639	–116.599956	1155.4	134	1289.4	N	N	Desert Hot Springs	
15	6N17	33.932773	–116.60279	1199.8	132	1331.4	N	N	Desert Hot Springs	
16	6S17	33.931761	–116.602834	1187.6	136	1323.2	N	N	Desert Hot Springs	
17	6N18	33.932752	–116.60604	1248.2	160	1407.8	N	N	Desert Hot Springs	
18	6S18	33.931887	–116.606036	1243.2	130	1372.8	N	N	Desert Hot Springs	
19	6N19	33.932695	–116.609106	1294.0	160	1453.6	N	N	Desert Hot Springs	
20	6S19	33.932007	–116.609061	1282.3	129	1410.9	N	N	Desert Hot Springs	
21	6N20	33.932696	–116.612169	1338.5	175	1513.1	N	N	White Water	

Table Ap.1B-7. Preliminary FAA Evaluation – Segment 6

GEO ID	Structure ID	Latitude (DD)	Longitude (DD)	Site Elevation (ASL)	Structure Height (AGL)	Total Height (AMSL)	Filing Required?	Lighting Expected?	City	Airspace Issues?
22	6S20	33.932114	–116.61206	1328.1	151	1478.6	N	N	White Water	
23	6N21	33.932679	–116.614803	1371.2	151	1521.7	N	N	White Water	
24	6S21	33.932253	–116.615025	1367.6	148	1515.6	N	N	White Water	
25	6N22	33.932653	–116.617866	1408.1	160	1567.7	N	N	White Water	
26	6S22	33.93225	–116.617875	1400.5	120	1520.1	N	N	White Water	
27	6N23	33.932638	–116.620515	1438.1	145	1582.6	N	N	White Water	
28	6S23	33.932256	–116.6205	1436.5	124	1560.1	N	N	White Water	
29	6N24	33.932646	–116.623396	1474.9	145	1619.5	N	N	White Water	
30	6S24	33.932254	–116.623243	1469.0	172	1641.0	N	N	White Water	
31	6N25	33.932558	–116.626538	1537.1	142	1679.1	N	N	White Water	
32	6S25	33.9317	–116.626483	1537.6	160	1697.1	N	N	White Water	
33	6N26	33.932176	–116.630222	1615.4	151	1766.0	N	N	White Water	
34	6S26	33.931165	–116.629612	1592.5	160	1752.1	N	N	White Water	
35	6N27	33.931892	–116.633689	1687.1	140	1827.1	N	N	White Water	
36	6S27	33.930585	–116.633017	1672.9	164	1836.9	N	N	White Water	
37	6N28	33.931428	–116.647154	2058.8	198	2256.8	N	N	White Water	
38	6S28	33.929255	–116.644718	1858.9	190	2048.9	N	N	White Water	
39	6S28A	33.928542	–116.648888	1770.6	165	1935.6	N	N	White Water	
40	6N29	33.931092	–116.65358	1929.5	115	2044.5	N	N	White Water	
41	6S29	33.927308	–116.652267	1427.9	180	1607.9	N	N	White Water	
42	6N30	33.931013	–116.657121	1918.5	126	2044.5	N	N	White Water	
43	6S30	33.926723	–116.655658	1364.7	119	1483.7	N	N	White Water	
44	6S30A	33.927017	–116.658095	1340.8	148	1488.3	N	N	White Water	
45	6N31	33.930712	–116.661777	1828.8	136	1964.8	N	N	White Water	
46	6S31	33.927306	–116.66053	1321.5	175	1496.1	N	N	White Water	
47	6S31A	33.927653	–116.663435	1268.4	180	1448.4	N	N	White Water	
48	6N32	33.930878	–116.667936	1524.8	180	1704.8	N	N	White Water	
49	6S32	33.928049	–116.666754	1358.6	166	1524.2	N	N	White Water	
50	6S33	33.928456	–116.670171	1361.3	149	1509.8	N	N	White Water	

Table Ap.1B-7. Preliminary FAA Evaluation – Segment 6

GEO ID	Structure ID	Latitude (DD)	Longitude (DD)	Site Elevation (ASL)	Structure Height (AGL)	Total Height (AMSL)	Filing Required?	Lighting Expected?	City	Airspace Issues?
51	6N34	33.931184	–116.67307	1476.8	187	1663.4	N	N	White Water	
52	6S34	33.928867	–116.673624	1396.6	143	1539.2	N	N	White Water	
53	6N35	33.931336	–116.67883	1484.0	187	1670.6	N	N	White Water	
54	6S35	33.929321	–116.67744	1360.7	154	1514.3	N	N	White Water	
55	6S36	33.929778	–116.681277	1389.2	175	1563.8	N	N	White Water	
56	6N37	33.931341	–116.68385	1531.3	145	1675.9	N	N	White Water	
57	6S37	33.930141	–116.684344	1437.6	175	1612.2	N	N	White Water	
58	6N38	33.931461	–116.687503	1498.7	160	1658.3	N	N	White Water	
59	6S38	33.930495	–116.687263	1476.9	172	1648.9	N	N	White Water	
60	6N39	33.931545	–116.691056	1494.9	160	1654.5	N	N	White Water	
61	6S39	33.930321	–116.691615	1467.1	175	1641.7	N	N	White Water	
62	6N40	33.931647	–116.694527	1473.1	142	1614.7	N	N	White Water	
63	6S40	33.930283	–116.694363	1452.4	133	1585.0	N	N	White Water	
64	6N41	33.931718	–116.696482	1469.3	133	1601.9	N	N	White Water	
65	6S41	33.930172	–116.698103	1451.2	128	1579.2	N	N	White Water	
66	6N42	33.931876	–116.699108	1484.2	133	1616.8	N	N	White Water	
67	6S42	33.931725	–116.699453	1484.2	119	1603.2	N	N	White Water	
68	6N43	33.931961	–116.701978	1513.7	130	1643.2	N	N	White Water	
69	6S43	33.931821	–116.701979	1511.0	130	1640.6	N	N	White Water	
70	6N44	33.93198	–116.705015	1538.2	144	1682.2	N	N	White Water	
71	6S44	33.93184	–116.70503	1535.7	145	1680.7	N	N	White Water	
72	6N45	33.932136	–116.707122	1559.5	157	1716.1	N	N	White Water	
73	6S45	33.931997	–116.707137	1558.0	151	1708.6	N	N	White Water	
74	6N46	33.932457	–116.711132	1602.4	145	1747.4	N	N	White Water	
75	6S46	33.932317	–116.711148	1600.7	157	1757.2	N	N	White Water	
76	6N47	33.932842	–116.714723	1639.0	151	1790.0	N	N	White Water	
77	6S47	33.932703	–116.714745	1636.8	184	1820.8	N	N	White Water	
78	6N48	33.932943	–116.718405	1656.6	142	1798.2	N	N	White Water	
79	6S48	33.932803	–116.718411	1654.3	176	1829.9	N	N	White Water	

Appendix 1C

Construction Equipment and Workforce Estimates

Appendix 1C
Construction Equipment and Workforce Estimates

The tables below display the construction equipment and workforce estimates for the various components of the Proposed Project. These include substations (Table Ap.1C-1) transmission lines (Table Ap.1C-2), shooflies (Table Ap.1C-4) subtransmission lines (Table Ap.1C-4), distribution lines (Table Ap.1C-5), and telecommunications systems (Table Ap.1C-6).

Table Ap.1C-1. Substation Construction Equipment and Workforce Estimates

Primary Equipment Description	Estimated Horsepower	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (days)	Duration of Use (hrs/days)
Vista Substation						
Civil				6-11		
Auger Truck	210	Diesel	1	2	20	6
¾-Ton Crew Cab 4×4	275	Gas	2		45	2
Boom/Crane Truck	180	Diesel	1	2	20	4
Dump Trucks	350	Diesel	2		25	4
Backhoe	125	Diesel	1	1	25	6
Lowboy Truck/Trailer	450	Diesel	1		25	2
Forklift	75	Diesel	1		30	2
Ditch Digger	75	Diesel	1		15	6
Electrical				8-12		
Manlifts/Bucket Truck	250	Diesel	2		65	6
Boom/Crane Truck	180	Diesel	1	2	60	6
¾-Ton Crew Cab 4×4	275	Gas	2		75	2
150-ton Crane	250	Diesel	1	2	50	6
Lowboy Truck/Trailer	450	Diesel	1		50	2
Ditch Digger	75	Diesel	1		15	6
Forklift	75	Diesel	1		65	2
Utility Truck	180	Gas	1		75	2
Maintenance				3		
Checker/Truck	180	Gas/Diesel	1		120	2
Manlifts	75	Gas/Diesel	1		20	4
¾-Ton Crew Cab 4×4	275	Gas	1		20	2
Gas/Processing Trailer	0	Electric	0		10	4
Test				2		
Utility Truck	180	Gas	1		120	2
San Bernardino Substation						
Civil				8-13		
Auger Truck	210	Diesel	1	2	24	6
¾-Ton Crew Cab 4×4	275	Gas	2		80	2
Boom/Crane Truck	180	Diesel	1	2	24	6
Dump Trucks	350	Diesel	2		40	4
Backhoe	125	Diesel	1	1	40	6
Lowboy Truck/Trailer	450	Diesel	1		40	2

Table Ap.1C-1. Substation Construction Equipment and Workforce Estimates

Primary Equipment Description	Estimated Horsepower	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (days)	Duration of Use (hrs/days)
Forklift	75	Diesel	1		80	2
Ditch Digger	75	Diesel	1		40	6
Electrical				10-14		
Manlifts/Bucket Truck	250	Diesel	2		100	6
Boom/Crane Truck	180	Diesel	1	2	80	6
¾-Ton Crew Cab 4×4	275	Gas	2		120	2
150-ton Crane	250	Diesel	1	2	40	6
Lowboy Truck/Trailer	450	Diesel	1		40	2
Ditch Digger	75	Diesel	1		10	6
Forklift	75	Diesel	1		100	2
Utility Truck	180	Gas	1		120	2
Maintenance				4		
Checker/Truck	180	Gas/Diesel	1		200	2
Manlifts	75	Gas/Diesel	1		20	4
¾-Ton Crew Cab 4×4	275	Gas	1		20	2
Gas/Processing Trailer	0	Electric	0		10	4
Test				2		
Utility Truck	180	Gas	1		140	2
El Casco Substation						
Civil				6-11		
Auger Truck	210	Diesel	1	2	25	6
¾-Ton Crew Cab 4×4	275	Gas	2		40	2
Boom/Crane Truck	180	Diesel	1	2	25	4
Dump Trucks	350	Diesel	2		25	4
Backhoe	125	Diesel	1	1	25	6
Lowboy Truck/Trailer	450	Diesel	1		25	2
Forklift	75	Diesel	1		30	2
Ditch Digger	75	Diesel	1		10	6
Electrical				8-12		
Manlifts/Bucket Truck	250	Diesel	2		40	6
Boom/Crane Truck	180	Diesel	1	2	30	6
¾-Ton Crew Cab 4×4	275	Gas	2		60	2
150-ton Crane	250	Diesel	1	2	20	6
Lowboy Truck/Trailer	450	Diesel	1		20	2
Ditch Digger	75	Diesel	1		10	6
Forklift	75	Diesel	1		50	2
Utility Truck	180	Gas	1		60	2
Maintenance				3		
Checker/Truck	180	Gas/Diesel	1		100	2
Manlifts	75	Gas/Diesel	1		10	4
¾-Ton Crew Cab 4×4	275	Gas	1		10	2
Gas/Processing Trailer	0	Electric	0		5	4

Table Ap.1C-1. Substation Construction Equipment and Workforce Estimates

Primary Equipment Description	Estimated Horsepower	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (days)	Duration of Use (hrs/days)
Test				2		
Utility Truck	180	Gas	1		70	2
Devers Substation						
Civil				8-13		
Auger Truck	210	Diesel	1	2	24	6
¾-Ton Crew Cab 4×4	275	Gas	2		80	2
Boom/Crane Truck	180	Diesel	1	2	24	6
Dump Trucks	350	Diesel	2		40	4
Backhoe	125	Diesel	1	1	40	6
Lowboy Truck/Trailer	450	Diesel	1		40	2
Forklift	75	Diesel	1		80	2
Ditch Digger	75	Diesel	1		40	6
Electrical				10-14		
Manlifts/Bucket Truck	250	Diesel	2		100	6
Boom/Crane Truck	180	Diesel	1	2	80	6
¾-Ton Crew Cab 4×4	275	Gas	2		120	2
150-ton Crane	250	Diesel	1	2	40	6
Lowboy Truck/Trailer	450	Diesel	1		40	2
Ditch Digger	75	Diesel	1		10	6
Forklift	75	Diesel	1		100	2
Utility Truck	180	Gas	1		120	2
Maintenance				4		
Checker/Truck	180	Gas/Diesel	1		200	2
Manlifts	75	Gas/Diesel	1		20	4
¾-Ton Crew Cab 4×4	275	Gas	1		20	2
Gas/Processing Trailer	0	Electric	0		10	4
Test				2		
Utility Truck	180	Gas	1		140	2
Etiwanda Substation						
Electrical				2		
¾-Ton Crew Cab 4×4	275	Gas	1		25	2
Test				2		
Utility Truck	180	Gas	1		20	2
Tennessee Substation						
Civil				3-4		
¾-Ton Crew Cab 4×4	275	Gas	1		4	2
Dump Trucks	350	Diesel	1	1	2	4
Backhoe	125	Diesel	1		2	6
Electrical				5		
Manlifts/Bucket Truck	250	Diesel	1		10	6
Boom/ Crane Truck	180	Diesel	1		3	4
¾-Ton Crew Cab 4×4	275	Gas	1		14	2

Table Ap.1C-1. Substation Construction Equipment and Workforce Estimates

Primary Equipment Description	Estimated Horsepower	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (days)	Duration of Use (hrs/days)
Forklift	75	Diesel	1		8	4
Maintenance				4		
Checker/ Truck	180	Gas/Diesel	1		14	2
¾-Ton Crew Cab 4×4	275	Gas	1		2	2
Gas/Processing Trailer	0	Electric	1		1	6
Test				2		
Utility Truck	180	Gas	1		8	2
Timoteo Substation						
Civil				3-8		
Auger Truck	210	Diesel	1	2	66	44
¾-Ton Crew Cab 4×4	275	Gas	1		8	2
Boom/Crane Truck	180	Diesel	1	2	66	44
Dump Trucks	350	Diesel	1	1	4	4
Backhoe	125	Diesel	1		4	6
Forklift	75	Diesel	1		88	44
Ditch Digger	75	Diesel	1		55	66
Electrical				7-10		
Manlifts/Bucket Truck	250	Diesel	1		20	6
Boom/ Crane Truck	180	Diesel	1	2	6	4
¾-Ton Crew Cab 4×4	275	Gas	1		25	2
Ditch Digger	75	Diesel	1	1	10	66
Forklift	75	Diesel	1		10	4
Maintenance				3		
Checker/Truck	180	Gas/Diesel	1		25	2
¾-Ton Crew Cab 4×4	275	Gas	1		4	2
Gas/Processing Trailer	0	Electric	1		2	6
Test				2		
Utility Truck	180	Gas	1		15	2

Source: SCE, 2013, Table 3.2-C.

Table Ap.1C-2. Transmission Construction Equipment and Workforce Estimates

Primary Equipment Description	Estimated Horse-power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (days)	Duration of Use (hrs/day)	Estimated Production Per Day
Survey (1)				4	39		48.5 miles
¾-Ton Pick-up Truck, 4×4	200	Gas	2		31	8	1.3 miles
Marshaling Yard (2)				5			
1-Ton Crew Cab, 4×4	300	Diesel	1		Duration of project for each yard	4	
R/T Crane (M)	300	Diesel	1			5	
R/T Forklift	200	Diesel	1			5	
Water Truck	300	Diesel	1			10	
Jet A Fuel Truck			1			4	
Truck, Semi, Tractor	350	Diesel	1			6	
ROW Clearing (3)				5	156		48.5 miles
1-Ton Crew Cab, 4×4	300	Diesel	1		124	10	0.4 miles
Motor Grader	350	Diesel	1		124	7	
Water Truck	350	Diesel	2		124	7	
Backhoe/Front Loader	350	Diesel	1		124	7	
Track Type Dozer	350	Diesel	1		124	9	
Lowboy Truck/Trailer	500	Diesel	1		124	5	
Roads & Landing Work (4)				10	144		157.2 miles & 574 pads
1-Ton Crew Cab, 4×4	300	Diesel	4		122	5	1.3 miles & 5 structure pads
Motor Grader	350	Diesel	2		122	5	
Water Truck	350	Diesel	4		122	10	
Backhoe/Front Loader	350	Diesel	2		122	7	
Drum Type Compactor	250	Diesel	2		122	5	
Track Type Dozer	350	Diesel	2		122	7	
Excavator	300	Diesel	2		61	7	
Lowboy Truck/Trailer	500	Diesel	2		61	4	
Guard Structure Installation (5)				12	57		673 structures
¾-Ton Pick-up Truck, 4×4	300	Diesel	4		56	8	12 structures
1-Ton Crew Cab Flatbed, 4×4	300	Diesel	2		56	8	
Compressor Trailer	120	Diesel	2		56	7	
Auger Truck	500	Diesel	2		56	5	
Extendable Flatbed Pole Truck	350	Diesel	2		56	8	
R/T Crane (M)	500	Diesel	2		56	8	
Water Truck	350	Diesel	1		56	8	
Extendable Flatbed Pole Truck	350	Diesel	2		56	8	
Remove Existing Conductor & OHGW (6)				56	468		772 circuit miles
1-Ton Crew Cab, 4×4	300	Diesel	16		468	10	1.7 miles
Manlift/Bucket Truck	350	Diesel	12		468	10	
Sleeving Truck	300	Diesel	4		468	5	
R/T Crane (M)	300	Diesel	4		468	5	
Flatbed Trailer	N/A	N/A	12		422	3	
Truck, Semi, Tractor	350	Diesel	4		422	3	
Bull Wheel Puller	500	Diesel	4		317	5	

Table Ap.1C-2. Transmission Construction Equipment and Workforce Estimates

Primary Equipment Description	Estimated Horse-power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (days)	Duration of Use (hrs/day)	Estimated Production Per Day
Water Truck	350	Diesel	4		317	6	
Hydraulic Rewind Puller	300	Diesel	4		317	5	
220 kV H-Frame/Three Pole Structure Removals				32	31		186 structures
1-Ton Truck, 4×4	300	Diesel	8		31	10	6 structures
Compressor Trailer	120	Diesel	8		31	5	
Backhoe/Front Loader	350	Diesel	4		31	10	
Manlift/Bucket Truck	250	Diesel	4		31	8	
Boom/Crane Truck	350	Diesel	4		31	8	
Flatbed Pole Truck	400	Diesel	4		31	10	
Remove Existing Lattice Steel Towers (7)				32	171		426 towers
1-Ton Crew Cab, 4×4	300	Diesel	8		171	8	2.5 towers
R/T Crane (M)	215	Diesel	8		171	5	
Compressor Trailer	120	Diesel	8		171	10	
Flatbed Truck/Trailer	350	Diesel	4		171	8	
Water Truck	350	Diesel	4		171	6	
Remove Existing Foundations (8)				16	173		431
1-Ton Crew Cab Flatbed, 4×4	300	Diesel	4		173	10	2.5 towers
Dump Truck	350	Diesel	4		173	10	
Backhoe/Front Loader	350	Diesel	4		173	10	
Water Truck	350	Diesel	4		173	10	
Remove Existing Tubular Steel Poles (9)				24	2		5 TSP
¾-Ton Pick-up Truck, 4×4	300	Diesel	8		2	8	3.8 steel poles
R/T Crane (M)	300	Diesel	4		2	5	
Compressor Trailer	120	Diesel	4		2	10	
Water Truck	350	Diesel	4		2	10	
Install LST Foundations (10)				28	166		526 LSTs
1-Ton Crew Cab Flatbed, 4×4	300	Diesel	8		142	5	3.2 LSTs
R/T Crane (M)	300	Diesel	4		142	7	
Backhoe/Front Loader	200	Diesel	4		142	10	
Auger Truck	500	Diesel	4		142	10	
10-cu. yd. Dump Truck	350	Diesel	8		142	10	
Kaman K-MAX		Jet A	1		142	7	
4,000-gallon Water Truck	350	Diesel	4		142	10	
10-cu. yd. Concrete Mixer Truck	425	Diesel	12		142	7	
LST Steel Haul (11)				8	211		526 LSTs
1-Ton Crew Cab Flatbed, 4×4	300	Diesel	4		181	10	2.5 LSTs
Truck/Trailer	400	Diesel	4		181	10	
Bell 500		Jet A	2		105	7	
4,000-gallon Water Truck	350	Diesel	4		181	10	
R/T Forklift	200	Diesel	2		181	6	

Table Ap.1C-2. Transmission Construction Equipment and Workforce Estimates

Primary Equipment Description	Estimated Horse-power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (days)	Duration of Use (hrs/day)	Estimated Production Per Day
LST Steel Assembly (12)				40	395		526 LSTs
¾-Ton Pick-up Truck, 4×4	300	Diesel	4		339	5	1.4 LSTs
1-Ton Crew Cab Flatbed, 4×4	300	Diesel	6		339	5	
R/T Forklift	125	Diesel	4		339	7	
R/T Crane (L)	300	Diesel	4		339	10	
Kaman K-MAX		Jet A	1		339	7	
Compressor Trailer	120	Diesel	4		339	6	
LST Erection (13)				48	275		526 LSTs
¾-Ton Pick-up Truck, 4×4	300	Diesel	8		236	8	2 LSTs
1-Ton Crew Cab Flatbed, 4×4	300	Diesel	8		236	8	
4,000-gallon Water Truck	350	Diesel	4		236	10	
R/T Crane (M)	215	Diesel	4		236	7	
R/T Crane (L)	350	Diesel	4		236	7	
Install Tubular Steel Pole Foundations (14)				24	19		46 TSPs
1-Ton Crew Cab Flatbed, 4×4	300	Diesel	12		4	5	2.5 TSPs
R/T Crane (M)	300	Diesel	4		4	7	
Backhoe/Front Loader	200	Diesel	4		4	10	
Auger Truck	500	Diesel	4		4	10	
4,000-gallon Water Truck	350	Diesel	4		4	10	
10-cu. yd. Dump Truck	350	Diesel	8		4	10	
10-cu. yd. Concrete Mixer Truck	425	Diesel	12		4	6	
Steel Pole Haul (15)				8	5		46 TSPs
¾-Ton Pick-up Truck, 4×4	300	Diesel	4		1	8	10 steel poles
4,000-gallon Water Truck	350	Diesel	4		1	10	
R/T Crane (L)	350	Diesel	2		1	10	
40' Flatbed Truck/Trailer	350	Diesel	4		1	8	
Steel Pole Assembly (16)				24	10		46 TSPs
¾-Ton Pick-up Truck, 4×4	300	Diesel	8		2	8	5 steel poles
4,000-gallon Water Truck	350	Diesel	4		2	10	
1-Ton Crew Cab Flatbed, 4×4	300	Diesel	8		2	6	
Compressor Trailer	120	Diesel	4		2	6	
R/T Crane (L)	350	Diesel	4		2	6	
Steel Pole Erection (17)				24	10		46 TSPs
¾-Ton Pick-up Truck, 4×4	300	Diesel	8		2	5	5 steel poles
1-Ton Crew Cab Flatbed, 4×4	300	Diesel	8		2	5	
4,000-gallon Water Truck	350	Diesel	4		2	10	
Compressor Trailer	120	Diesel	4		2	5	
R/T Crane (L)	350	Diesel	4		2	6	

Table Ap.1C-2. Transmission Construction Equipment and Workforce Estimates

Primary Equipment Description	Estimated Horse-power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (days)	Duration of Use (hrs/day)	Estimated Production Per Day
H-Frame Installation (18)				12	5		1 structure
¾-Ton Pick-up Truck, 4×4	300	Diesel	4		5	8	
1-Ton Crew Cab Flatbed, 4×4	300	Diesel	2		5	8	
Compressor Trailer	120	Diesel	2		5	7	
Auger Truck	500	Diesel	2		5	5	
Extendable Flatbed Pole Truck	350	Diesel	2		5	8	
R/T Crane (M)	500	Diesel	2		5	8	
Water Truck	350	Diesel	1		5	8	
Extendable Flatbed Pole Truck	350	Diesel	2		5	8	
Install Conductor — (19)				220	122		184 circuit miles
¾-Ton Pick-up Truck, 4×4	300	Diesel	4		95	10	1.6 miles
1-Ton Crew Cab Flatbed, 4×4	300	Diesel	8		95	10	
Wire Truck/Trailer	350	Diesel	4		65	10	
R/T Crane (M)	215	Diesel	4		95	10	
Dump Truck	350	Diesel	2		95	10	
Bucket Truck	350	Diesel	4		95	10	
22-Ton Manitex	350	Diesel	4		95	10	
Splicing Rig	350	Diesel	2		25	5	
Splicing Lab	300	Diesel	2		25	5	
Sock Line Puller	300	Diesel	2		25	6	
Bull Wheel Puller	350	Diesel	2		50	10	
Backhoe/Front Loader	125	Diesel	2		50	8	
D8 Cat	350	Diesel	1		50	8	
Hughes 500 E Helicopter		Jet A	2		50	7	
Fuel, Helicopter Support Truck	300	Diesel	2		50	7	
Sag Cat w/ 2 winches	350	Diesel	1		25	10	
Static Truck/Tensioner	350	Diesel	2		50	10	
Guard Structure Removal (20)				12	40		669 structures
¾-Ton Pick-up Truck, 4×4	300	Diesel	4		39	7	17.2 structures
1-Ton Crew Cab Flatbed, 4×4	300	Diesel	4		39	7	
Compressor Trailer	120	Diesel	4		39	7	
Extendable Flatbed Pole Truck	350	Diesel	4		39	6	
Water Truck	300	Diesel	2		39	10	
R/T Crane (M)	500	Diesel	2		39	8	
80 ft. Hydraulic Manlift/Bucket Truck	350	Diesel	2		39	4	
Restoration (21)				14	20		48.5 Miles
1-Ton Crew Cab, 4×4	300	Diesel	4		16	2	2.5 miles
Motor Grader	350	Diesel	2		16	6	
Water Truck	350	Diesel	2		16	8	
Backhoe/Front Loader	350	Diesel	2		16	6	
Drum Type Compactor	250	Diesel	2		16	6	
Track Type Dozer	350	Diesel	2		16	6	
Lowboy Truck/Trailer	300	Diesel	2		16	3	

Table Ap.1C-2. Transmission Construction Equipment and Workforce Estimates

Primary Equipment Description	Estimated Horse-power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (days)	Duration of Use (hrs/day)	Estimated Production Per Day
Retaining walls (22)				100			53 walls
1-Ton Crew Cab, 4×4	300	Diesel	4		254	10	48 days/wall
Motor Grader	250	Diesel	2		254	10	
Water Truck	350	Diesel	2		254	10	
Backhoe/Front Loader	125	Diesel	2		254	10	
Drum Type Compactor	250	Diesel	2		254	10	
Track Type Dozer	350	Diesel	2		254	10	
Concrete Mixer	350	Diesel	2		254	10	
Excavator	250	Diesel	2		254	10	
Dump Truck	350	Diesel	2		254	10	
Lowboy Truck/Trailer	300	Diesel	2		254	10	

Source: SCE, 2013, Tables 3.2-H and 3.13-D.

Crew Size Assumptions:

1 Survey = one 4-man crew
2 Marshaling Yards = four 1-man crews
3 Right-of-way Clearing = one 5-man crew
4 Roads & Landing Work = two 5-man crews
5 Guard Structure Installation = two 6-man crews
6 Remove Existing Conductor & OHGW = four 14-man crews
7 Remove Existing LSTs & LSH-Frames = four 8-man crews
8 Remove Existing Foundations = four 4-man crews
N/A Remove Existing Wood Poles = 0 0-man crews
9 Remove Existing TSP / LWS Poles = four 6-man crews
10 Install Foundations for LSTs = four 7-man crews
11 LST Steel Haul = two 4-man crews
12 LST Steel Assembly = four 10-man crews
13 LST Erection = four 12-man crews
14 Install Foundations for TSPs = four 6-man crews
15 Steel Pole Haul = two 4-man crews
16 Steel Pole Assembly = four 6-man crews
17 Steel Pole Erection = four 6-man crews
18 H-Frame Installation = 1 8-man crew
19 Conductor & OHGW/OPGW Installation = four 55-man crews
20 Guard Structure Removal = two 6-man crews
21 Restoration = two 7-man crews
22 Retaining Walls = ten 10-man crews

Table Ap.1C-3. Transmission Shoo-Fly Construction Equipment and Workforce Estimates

Primary Equipment Description	Estimated Horse-power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (days)	Duration of Use (hrs/day)	Estimated Production Per Day
Survey (1)				**16**	**26**		**20 miles**
1-Ton Pick-up Truck, 4×4	300	Gas	8		26	10	
ROW Clearing (3)				**15**	**14**		**20 miles**
1-Ton Truck, 4×4	300	Gas	3		14	10	
Backhoe/Front Loader	350	Diesel	3		14	7	
Track Type Dozer	350	Diesel	3		14	7	
Road Grader	350	Diesel	3		14	7	
Water Truck	300	Diesel	6		14	9	
Lowboy Truck/Trailer	500	Diesel	3		14	5	
Roads & Landing Work (4)				**24**	**60**		**300 pads**
1-Ton Truck, 4×4	300	Gas	8		60	5	
Backhoe/Front Loader	350	Diesel	4		60	7	
Track Type Dozer	350	Diesel	4		60	7	
Motor Grader	350	Diesel	4		60	5	
Water Truck	300	Diesel	8		60	10	
Drum Type Compactor	250	Diesel	4		60	5	
Excavator	300	Diesel	4		36	7	
Lowboy Truck/Trailer	500	Diesel	4		36	4	
Shoo-fly Direct Buried Steel/Wood Poles (DBSP) Haul (5)				**8**	**120**		**300 DBSP poles**
¾-Ton Truck, 4×4	275	Gas	2		120	10	
Water Truck	300	Diesel	1		120	10	
Boom/Crane Truck	350	Diesel	2		120	8	
Flatbed Pole Truck	400	Diesel	2		120	10	
Shoo-fly Direct Buried Steel/Wood Pole Assembly (6)				**18**	**150**		**300 DBSP poles**
¾-Ton Truck, 4×4	275	Gas	2		150	6	
Compressor Trailer	120	Diesel	1		150	6	
1-Ton Truck, 4×4	300	Diesel	2		150	10	
4,000-gallon Water Truck	350	Diesel	1		150	10	
Boom/Crane Truck	350	Diesel	1		150	8	
Install Shoo-fly Direct Buried Steel/Wood Pole (7)				**18**	**100**		**300 DBSP poles**
1-Ton Truck, 4×4	300	Diesel	2		100	6	
Manlift/Bucket Truck	350	Diesel	2		100	10	
Boom/Crane Truck	350	Diesel	2		100	7	
Auger Truck	210	Diesel	2		70	8	
Water Truck	300	Diesel	2		100	10	
Backhoe/Front Loader	125	Diesel	2		100	10	
Extendable Flatbed Pole Truck	400	Diesel	2		100	6	
Install Conductor/GW (8)				**165**	**20**		**20 miles**
¾-Ton Truck, 4×4	275	Gas	3		20	10	
1-Ton Truck, 4×4	300	Diesel	6		20	10	

Table Ap.1C-3. Transmission Shoo-Fly Construction Equipment and Workforce Estimates

Primary Equipment Description	Estimated Horse-power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (days)	Duration of Use (hrs/day)	Estimated Production Per Day
Manlift/Bucket Truck	350	Diesel	3		20	10	
Boom/Crane Truck	350	Diesel	3		20	10	
R/T Crane (M)	215	Diesel	3		20	10	
Dump Truck	350	Diesel	2		20	10	
Wire Truck/Trailer	350	Diesel	3		5.4	10	
Sock Line Puller	300	Diesel	2		5.4	10	
Bull Wheel Puller	350	Diesel	2		10	10	
Static Truck/Tensioner	350	Diesel	2		20	10	
Splicing Rig	350	Diesel	2		5.4	10	
Spacing Cart	10	Diesel	4		5.4	10	
Backhoe/Front Loader	125	Diesel	2		4	8	
D8 Cat	350	Diesel	1		4	8	
Sag Cat w/ 2 winches	350	Diesel	1		4	10	
Lowboy Truck/Trailer	450	Diesel	3		20	10	
Hughes 500 E		Jet A	2		4	7	
Fuel, Helicopter Support Truck	300	Diesel	2		4	7	
Remove Shoo-fly Conductor & GW (9)				**28**	**20**		**20 circuit miles**
1-Ton Truck, 4×4	300	Diesel	8		20	10	
Manlift/Bucket Truck	250	Diesel	6		20	10	
Sleeving Truck	300	Diesel	4		20	5	
Boom/Crane Truck	350	Diesel	4		20	5	
Bull Wheel Puller	500	Diesel	2		14	5	
Truck, Semi-Tractor	350	Diesel	2		10	2	
Hydraulic Rewind Puller	300	Diesel	2		14	5	
4,000-gallon Water Truck	350	Diesel	2		20	10	
Lowboy Truck/Trailer	450	Diesel	6		20	3	
Shoo-fly Pole Removal (10)				**8**	**80**		**300 LWS poles**
1-Ton Truck, 4×4	300	Diesel	2		80	6	
Compressor Trailer	60	Diesel	2		80	6	
Water Truck	300	Diesel	2		80	10	
Manlift/Bucket Truck	250	Diesel	2		80	10	
Boom/Crane Truck	350	Diesel	2		80	7	
Flatbed Truck/Trailer	400	Diesel	2		80	6	
Restoration (11)				**21**	**8**		**20 miles**
1-Ton Truck, 4×4	300	Diesel	6		8	4	
Backhoe/Front Loader	125	Diesel	3		8	7	
Motor Grader	250	Diesel	3		8	7	
Water Truck	300	Diesel	3		8	10	
Drum Type Compactor	100	Diesel	3		8	7	
Lowboy Truck/Trailer	450	Diesel	3		8	3	

Source: SCE, 2013, Table 3.2-J.

Crew Size Assumptions:

1 Survey = four 4-man crews
2 Construction and materials yards = one 4-man crew for each yard
3 Right-of-way clearing = three 5-man crews
4 Roads & landing work = four 6-man crews
5 Shoo-fly pole haul = two 4-man crews
6 Wood/LWS/shoo-Fly pole assembly = three 6-man crews
7 Install wood/H-frame/LWS/shoo-fly pole = three 6-man crews
8 Install/transfer conductor/GW = three 55-man crews
9 Remove shoo-fly conductor & GW = two 14-man crews
10 Shoo-fly pole removal = one 6-man crew
11 Restoration = three 7-man crews

Table Ap.1C-4. Subtransmission Construction Equipment and Workforce Estimates

Primary Equipment Description	Estimated Horse-power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (days)	Duration of Use (hrs/day)	Estimated Production Per Day
Survey (1)				4	6		5.3 miles
1-Ton Truck, 4×4	300	Gas	2		6	8	1 mile
Marshaling Yard (2)				4			1 yard
1-Ton Truck, 4×4	300	Gas	1		Duration of project	4	5 acres
R/T Forklift	125	Diesel	1			6	
Boom/Crane Truck	350	Diesel	1			2	
Water Truck	300	Diesel	1			8	
Truck, Semi-Tractor	400	Diesel	1			2	
ROW Clearing (3)				5	14		3.3 miles
1-Ton Truck, 4×4	300	Gas	1		14	8	0.25 miles
Backhoe/Front Loader	125	Diesel	1		14	6	
Track Type Dozer	150	Diesel	1		14	6	
Motor Grader	250	Diesel	1		14	6	
Water Truck	300	Diesel	1		14	8	
Lowboy Truck/Trailer	450	Diesel	1		14	4	
Roads & Landing Work (4)				5	4		2 miles & 9 pads
1-Ton Truck, 4×4	300	Gas	1		4	8	existing roads: 2 miles structure pads (flat to mod): 4 pads
Backhoe/Front Loader	125	Diesel	1		4	4	
Track Type Dozer	150	Diesel	1		4	4	
Motor Grader	250	Diesel	1		4	6	
Water Truck	300	Diesel	1		4	8	
Drum Type Compactor	100	Diesel	1		4	6	
Excavator	250	Diesel	1		3	4	
Lowboy Truck/Trailer	450	Diesel	1		4	4	
Guard Structure Installation (5)				**6**	**14**		**70 structures**
¾-Ton Truck, 4×4	275	Gas	1		14	8	5 structures
1-Ton Truck, 4×4	300	Gas	1		14	8	
Compressor Trailer	60	Diesel	1		14	4	
Manlift/Bucket Truck	250	Diesel	1		14	4	
Boom/Crane Truck	350	Diesel	1		14	6	
Auger Truck	210	Diesel	1		14	4	
Extendable Flatbed Pole Truck	400	Diesel	1		14	8	
Remove Existing Conductor & GW (6)				**14**	**8**		**4 circuit miles**
1-Ton Truck, 4×4	300	Gas	2		8	4	non-bundled: 0.5 miles
Manlift/Bucket Truck	250	Diesel	2		8	8	
Boom/Crane Truck	350	Diesel	2		8	8	
Bull Wheel Puller	350	Diesel	1		6	6	
Sock Line Puller	300	Diesel	1		6	6	
Static Truck/Tensioner	350	Diesel	1		8	6	
Lowboy Truck/Trailer	450	Diesel	2		8	4	

Table Ap.1C-4. Subtransmission Construction Equipment and Workforce Estimates

Primary Equipment Description	Estimated Horse-power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (days)	Duration of Use (hrs/day)	Estimated Production Per Day
Wood/LWS Pole Removal (7)				**6**	**4**		**28 poles**
1-Ton Truck, 4×4	300	Gas	2		4	8	9 poles
Compressor Trailer	60	Diesel	1		4	4	
Manlift/Bucket Truck	250	Diesel	1		4	6	
Boom/Crane Truck	350	Diesel	1		4	6	
Flatbed Pole Truck	400	Diesel	1		4	8	
LST Removal (8)				**6 (S/C)**	**18**		**9 LSTs**
1-Ton Truck, 4×4	300	Gas	2		18	4	0.5 LSTs
Compressor Trailer	60	Diesel	1		18	8	
R/T Crane (M)	215	Diesel	1		18	6	
Boom/Crane Truck	350	Diesel	1		18	6	
Flatbed Truck/Trailer	400	Diesel	1		18	4	
LST Foundation Removal (9)				**4**	**5**		**9 LSTs**
¾-Ton Truck, 4×4	275	Gas	1		5	4	2 LSTs
Compressor Trailer	60	Diesel	1		5	8	
Backhoe/Front Loader	125	Diesel	1		5	6	
Dump Truck	350	Diesel	1		5	6	
Excavator	250	Diesel	1		5	4	
Install TSP Foundations (10)				**6**	**54**		**26 TSPs**
¾-Ton Truck, 4×4	275	Gas	1		54	4	0.5 TSPs
Boom/Crane Truck	350	Diesel	1		54	4	
Backhoe/Front Loader	125	Diesel	1		54	6	
Auger Truck	210	Diesel	1		21	6	
Water Truck	300	Diesel	1		49	8	
Dump Truck	350	Diesel	1		49	4	
Concrete Mixer Truck	350	Diesel	3		33	2	
TSP Haul (11)				**4**	**7**		**26 TSPs**
¾-Ton Truck, 4×4	275	Gas	1		7	8	4 TSPs
Boom/Crane Truck	350	Diesel	1		7	6	
Flatbed Pole Truck	400	Diesel	1		7	8	
TSP Assembly (12)				**8**	**26**		**26 TSPs**
¾-Ton Truck, 4×4	275	Gas	2		26	4	1 TSP
1-Ton Truck, 4×4	300	Gas	2		26	4	
Compressor Trailer	60	Diesel	1		26	6	
Boom/Crane Truck	350	Diesel	1		26	8	
TSP Erection (13)				**8**	**26**		**26 TSPs**
¾-Ton Truck, 4×4	275	Gas	2		26	4	1 TSP
1-Ton Truck, 4×4	300	Gas	2		26	4	
Compressor Trailer	60	Diesel	1		26	4	
Boom/Crane Truck	350	Diesel	1		26	8	

Table Ap.1C-4. Subtransmission Construction Equipment and Workforce Estimates

Primary Equipment Description	Estimated Horse-power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (days)	Duration of Use (hrs/day)	Estimated Production Per Day
LWS Pole Haul (14)				**4**	**27**		**154 LWS poles**
¾-Ton Truck, 4×4	275	Gas	1		27	8	6 poles
Boom/Crane Truck	350	Diesel	1		27	6	
Flatbed Pole Truck	400	Diesel	1		27	8	
LWS Pole Assembly (15)				**8**	**39**		**154 LWS poles**
¾-Ton Truck, 4×4	275	Gas	2		39	4	4 poles
1-Ton Truck, 4×4	300	Gas	2		39	4	
Compressor Trailer	60	Diesel	1		39	6	
Boom/Crane Truck	350	Diesel	1		39	8	
Install LWS Pole (16)				**6**	**39**		**154 poles**
1-Ton Truck, 4×4	300	Gas	1		39	8	4 poles
Manlift/Bucket Truck	250	Diesel	1		39	6	
Boom/Crane Truck	350	Diesel	1		39	6	
Auger Truck	210	Diesel	1		39	4	
Backhoe/Front Loader	125	Diesel	1		39	8	
Extendable Flatbed Pole Truck	400	Diesel	1		39	8	
Install Conductor (17)				**20**	**13**		**4.3 circuit miles**
1-Ton Truck, 4×4	300	Gas	3		13	4	0.33 miles
Manlift/Bucket Truck	250	Diesel	4		13	8	
Boom/Crane Truck	350	Diesel	1		13	8	
Dump Truck	350	Diesel	1		13	2	
Wire Truck/Trailer	350	Diesel	2		13	6	
Sock Line Puller	300	Diesel	1		5	6	
Bull Wheel Puller	350	Diesel	1		9	6	
Static Truck/Tensioner	350	Diesel	1		13	6	
Backhoe/Front Loader	125	Diesel	1		13	2	
Lowboy Truck/Trailer	450	Diesel	2		13	4	
Hughes 500 E Helicopter		Jet A	1		4	6	
Fuel, Helicopter Support Truck	300	Diesel	1		4	6	
Guard Structure Removal (18)				**6**	**10**		**70 structures**
¾-Ton Truck, 4×4	275	Gas	1		10	8	7 structures
1-Ton Truck, 4×4	300	Gas	1		10	8	
Compressor Trailer	60	Diesel	1		10	4	
Manlift/Bucket Truck	250	Diesel	1		10	4	
Boom/Crane Truck	350	Diesel	1		10	6	
Extendable Flatbed Pole Truck	400	Diesel	1		10	8	

Table Ap.1C-4. Subtransmission Construction Equipment and Workforce Estimates

Primary Equipment Description	Estimated Horse-power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (days)	Duration of Use (hrs/day)	Estimated Production Per Day
Restoration (19)				7	4		3.3 miles
1-Ton Truck, 4×4	300	Gas	2		4	4	1 mile
Backhoe/Front Loader	125	Diesel	1		4	4	
Motor Grader	250	Diesel	1		4	6	
Water Truck	300	Diesel	1		4	8	
Drum Type Compactor	100	Diesel	1		4	4	
Lowboy Truck/Trailer	450	Diesel	1		4	4	
Vault Installation (20)				6	27		9 vaults
1-Ton Truck, 4×4	300	Gas	2		27	4	0.33 vaults
Backhoe/Front Loader	125	Diesel	1		27	8	
Excavator	250	Diesel	1		14	6	
Dump Truck	350	Diesel	2		27	8	
Water Truck	300	Diesel	1		27	8	
Crane (L)	500	Diesel	1		9	6	
Concrete Mixer Truck	350	Diesel	3		14	2	
Lowboy Truck/Trailer	450	Diesel	1		9	4	
Flatbed Truck/Trailer	400	Diesel	3		9	4	
Duct Bank Installation (21)				6	22		5,380 trench feet
1-Ton Truck, 4×4	300	Gas	2		22	4	250 feet
Compressor Trailer	60	Diesel	1		22	4	
Backhoe/Front Loader	125	Diesel	1		22	6	
Dump Truck	350	Diesel	2		22	6	
Pipe Truck/Trailer	275	Diesel	1		22	6	
Water Truck	300	Diesel	1		22	8	
Concrete Mixer Truck	350	Diesel	3		22	2	
Lowboy Truck/Trailer	450	Diesel	1		8	4	
Install Underground Cable (22)				8	3		1 circuit mile
1-Ton Truck, 4×4	300	Gas	2		3	4	0.33 miles
Manlift/Bucket Truck	250	Diesel	1		3	6	
Boom/Crane Truck	350	Diesel	1		3	6	
Wire Truck/Trailer	350	Diesel	2		3	6	
Puller	350	Diesel	1		3	6	
Static Truck/Tensioner	350	Diesel	1		3	6	

Source: SCE, 2013, Table 3.2-K.

Crew Size Assumptions:
1 - Survey = one 4-man crew
2 - Marshaling Yards = one 4-man crew
3 - Right-of-way Clearing = one 5-man crew
4 - Roads & Landing Work = one 5-man crew
5 - Guard Structure Installation = one 6-man crew
6 - Remove Existing Conductor & GW = one 14-man crew
7 - Remove Existing Wood/LWS Poles = one 6-man crew
8 - Remove Existing LSTs = one 6-man crew

9 - Remove Existing LST Foundations = one 4-man crew
10 - Install Foundations for TSPs = one 6-man crew
11 - TSP Haul = one 4-man crew
12 - TSP Assembly = one 8-man crew
13 - TSP Erection = one 8-man crew
14 - TSP Haul = one 4-man crew
15 - TSP Assembly = one 8-man crew
16 - Install Wood/LWS Pole = one 6-man crew
17 - Conductor & GW Installation = two 10-man crews
18 - Guard Structure Removal = one 6-man crew
19 - Restoration = one 7-man crew
20 - Vault Installation = one 6-man crew
21 - Duct Bank Installation = one 6-man crew
22 - Install Underground Cable = one 8-man crew

Table Ap.1C-5. Distribution Construction Equipment and Workforce Estimates

Activity and Number of Personnel	Work Days	Equipment and Quantity	Duration of Use (hours)	Fuel Type
Location 1 (8 people)	3	2 – Line Truck	7	Diesel
	3	2 – Pickup Truck	7	Diesel
Location 2 (8 people)	3	2 – Line Truck	7	Diesel
	3	2 – Pickup Truck	7	Diesel
Location 3 (8 people)	6	2 – Line Truck	7	Diesel
	6	2 – Pickup Truck	7	Diesel
Location 4 (7 people)	5	1 – Rodder Truck	6	Diesel
	5	1 – Cable Dolly	6	
	5	1 – Reel Truck	6	Diesel
	20	1 – Concrete Truck	4	Diesel
	20	1 – Dump Truck	6	Diesel
	20	1 – Backhoe	8	Diesel
Location 5 (8 people)	8	2 – Line Truck	7	Diesel
	8	2 – Pickup Truck	7	Diesel

Source: SCE, 2013, Table 3.2-M.

Table Ap.1C-6. Telecommunication System Construction Equipment and Workforce Estimates

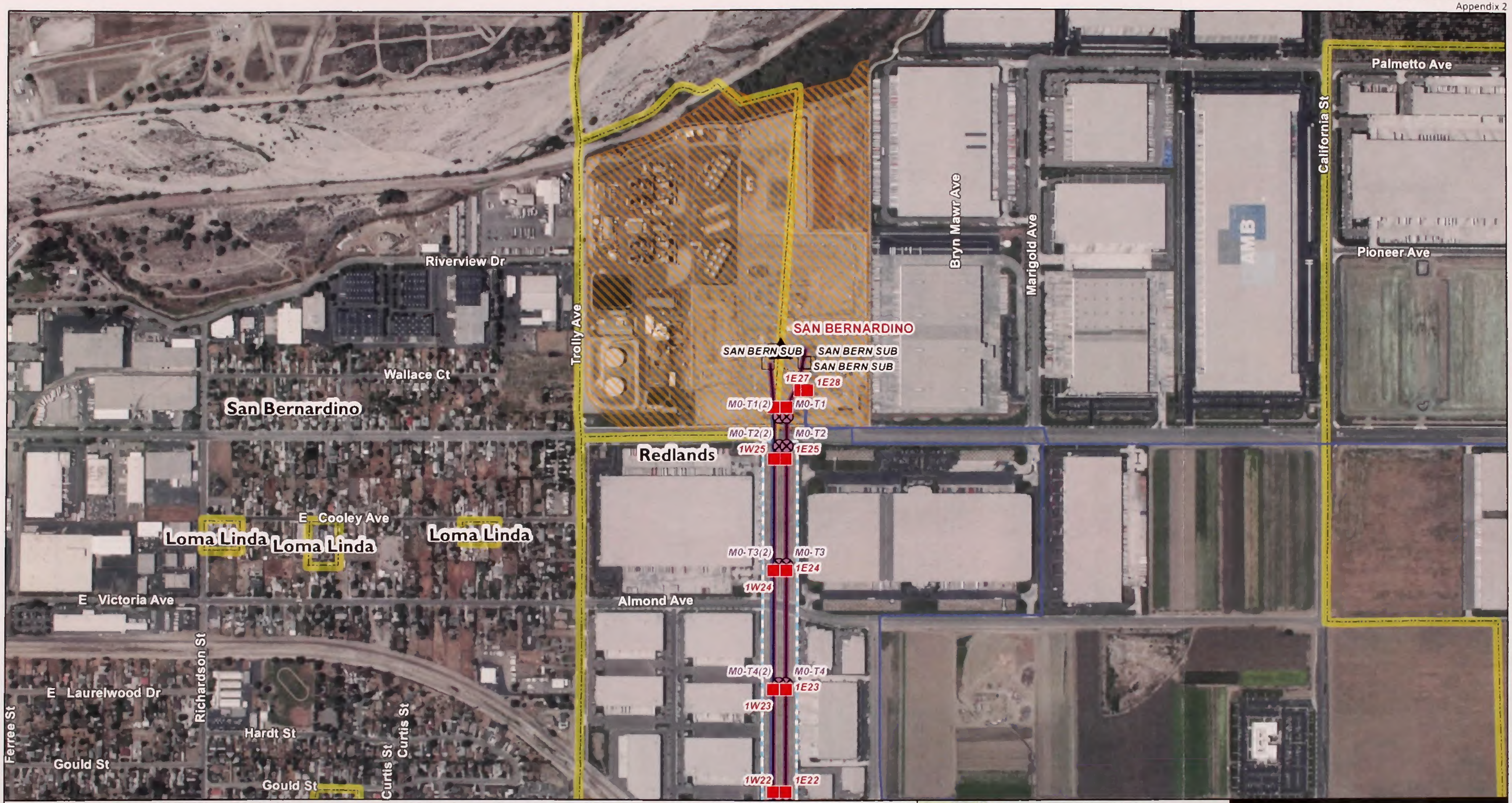
Primary Equipment Description	Estimated Horse-power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (days)	Duration of Use (hours)
Telecommunications work for OPGW and work to accommodate construction						
Bucket Truck	300	Diesel	6	12	24	7
Crew Truck	300	Diesel	3	3	24	8
Backhoe	200	Diesel	2	4	40	7
Dump truck	350	Diesel	2	3	17	3
Material Transport	350	Diesel	1	1	4	4
Forklift	200	Diesel	1	1	4	1
Splice Lab	300	Diesel	6	12	36	7
Telecommunications work inside the MEER						
Crew Truck	300	Gas	3	3	30	8

Source: SCE, 2013, Table 3.2-O.

Appendix 2. Detailed Project Maps

Appendix 2

Detailed Project Maps



Sources: SCE 2014, USGS 2013

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Transmission

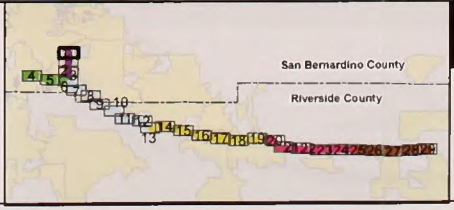
- 🟥 Proposed New Tower
- ⊗ Existing Tower to be Removed
- ☐ Existing Tower (No Changes)
- ▲ Substation
- — Subtransmission Line
- ▨ Substation Footprint
- ⬚ Approx. Existing 220kV T/L Corridor

Proposed Transmission Line Segment

- — Segment 1

Land Jurisdiction

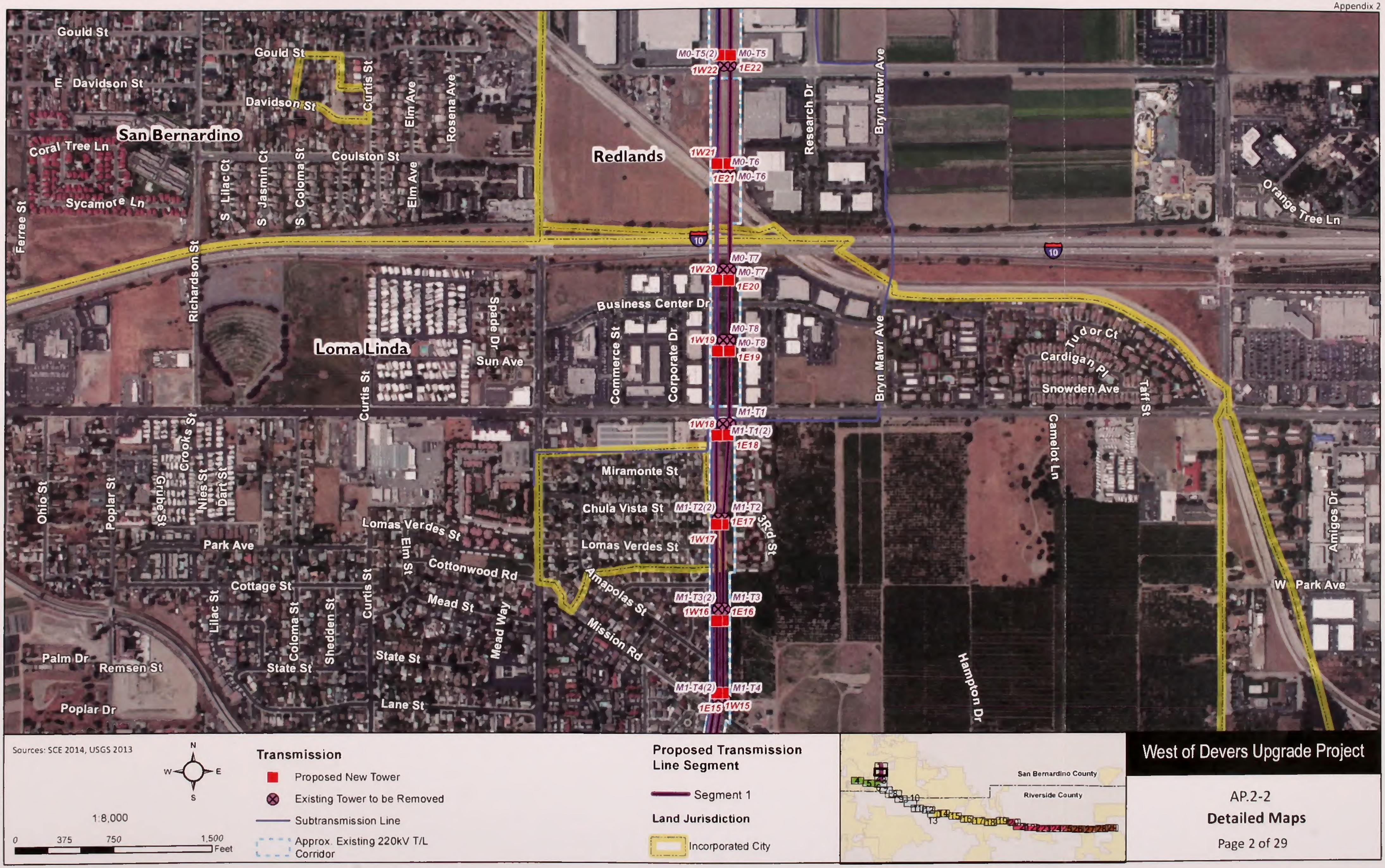
- ☐ Incorporated City



West of Devers Upgrade Project

AP.2-1

Detailed Maps



Transmission

- 🟥 Proposed New Tower
- ⊗ Existing Tower to be Removed
- — Subtransmission Line
- ▭ Approx. Existing 220kV T/L Corridor

Proposed Transmission Line Segment

- — Segment 1

Land Jurisdiction

- ▭ Incorporated City

West of Devers Upgrade Project

AP.2-2

Detailed Maps

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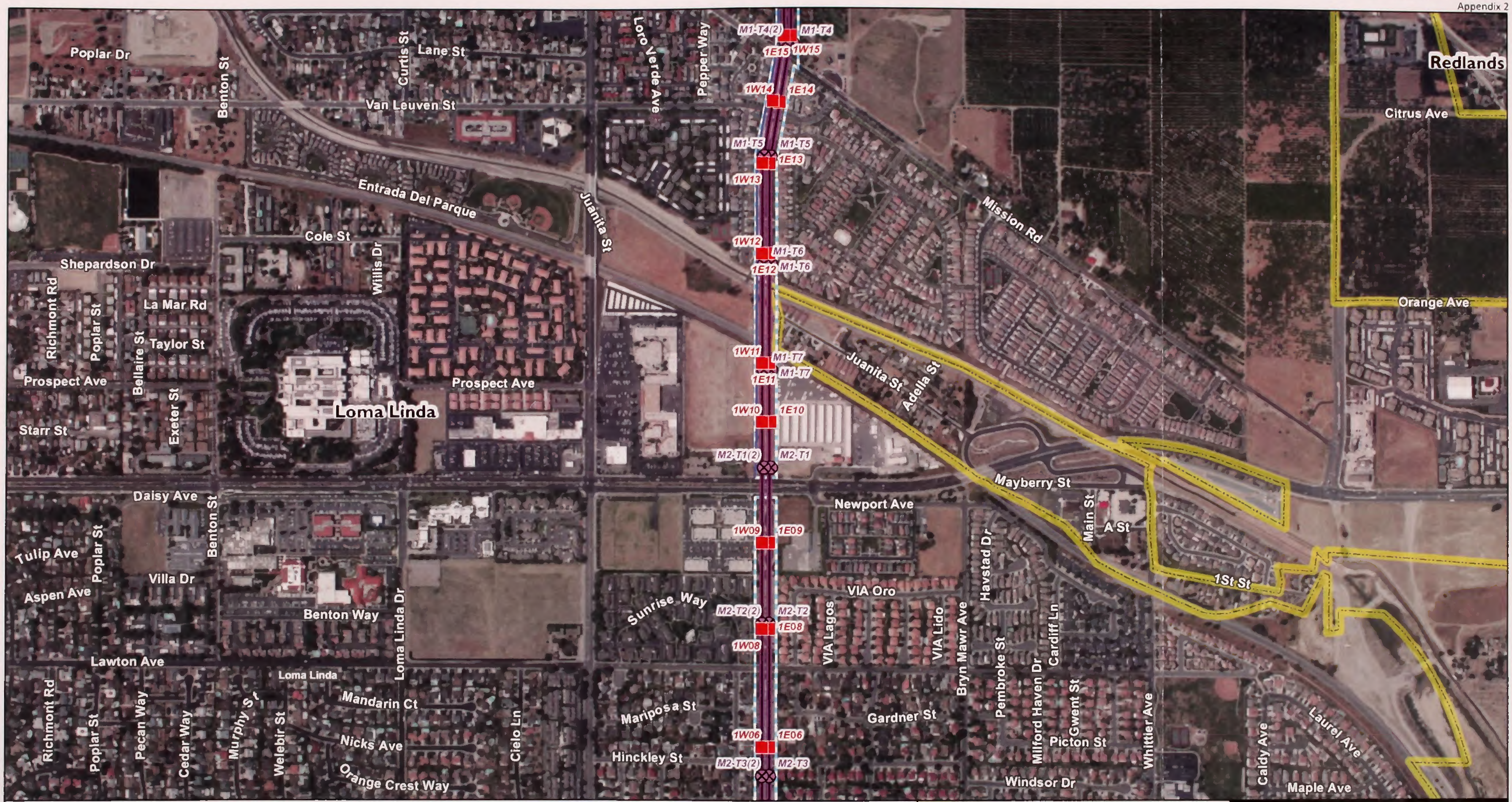

Sources: SCE 2014, USGS 2013

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Transmission

🟥 Proposed New Tower

⊗ Existing Tower to be Removed

Subtransmission Line

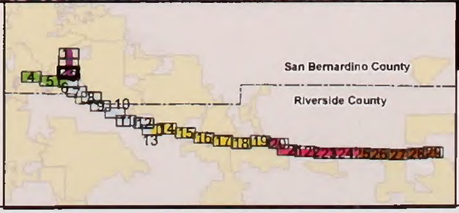
Approx. Existing 220kV T/L Corridor

Proposed Transmission Line Segment

Segment 1

Land Jurisdiction

Incorporated City



West of Devers Upgrade Project

AP.2-3

Detailed Maps

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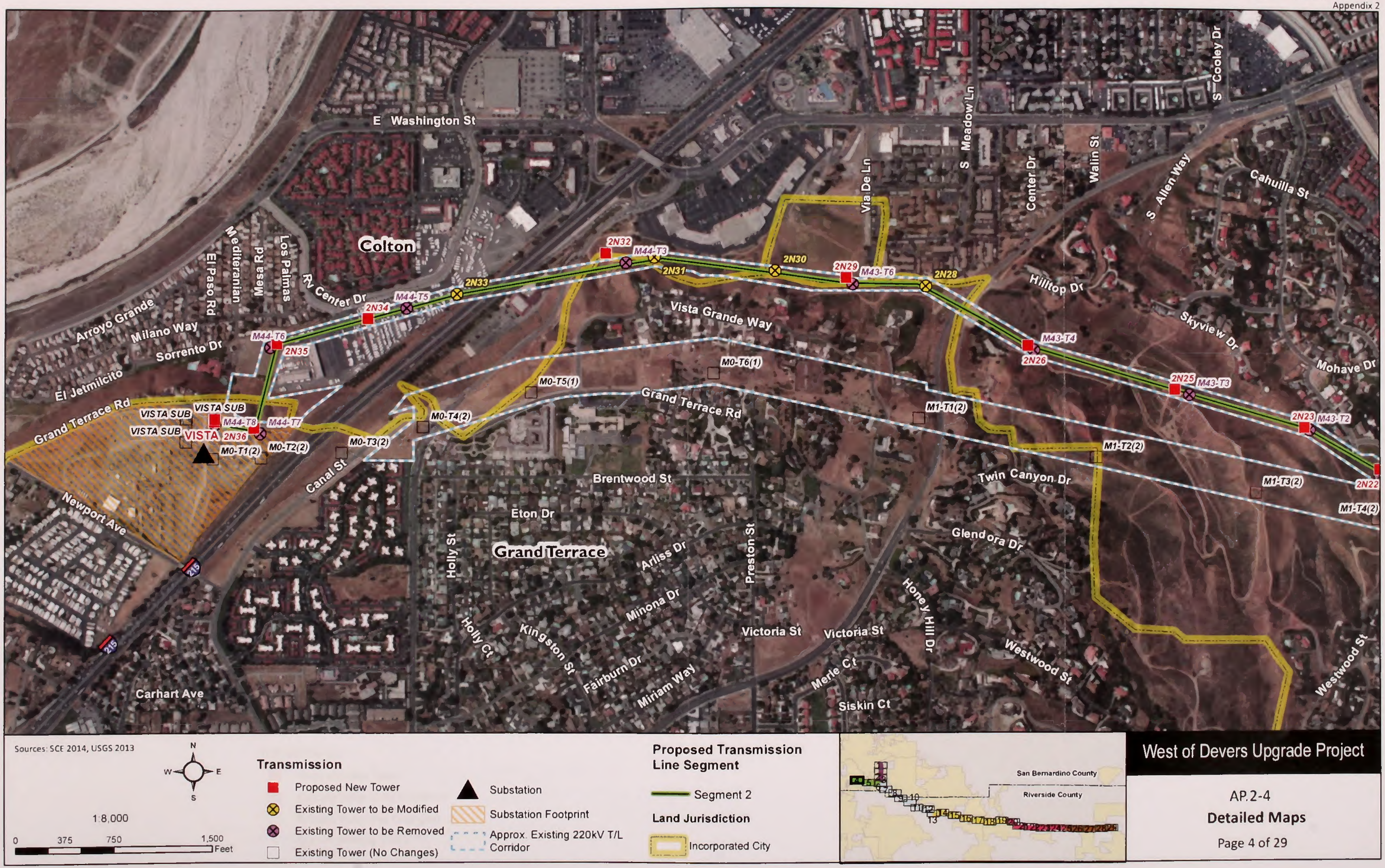

Sources: SCE 2014, USGS 2013

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0 375 750 1,500 Feet

Transmission

🟥 Proposed New Tower

⊗ Existing Tower to be Modified

⊗ Existing Tower to be Removed

☐ Existing Tower (No Changes)

▲ Substation

▨ Substation Footprint

┄ Approx. Existing 220kV T/L Corridor

Proposed Transmission Line Segment

— Segment 2

Land Jurisdiction

☐ Incorporated City

West of Devers Upgrade Project

AP.2-4

Detailed Maps

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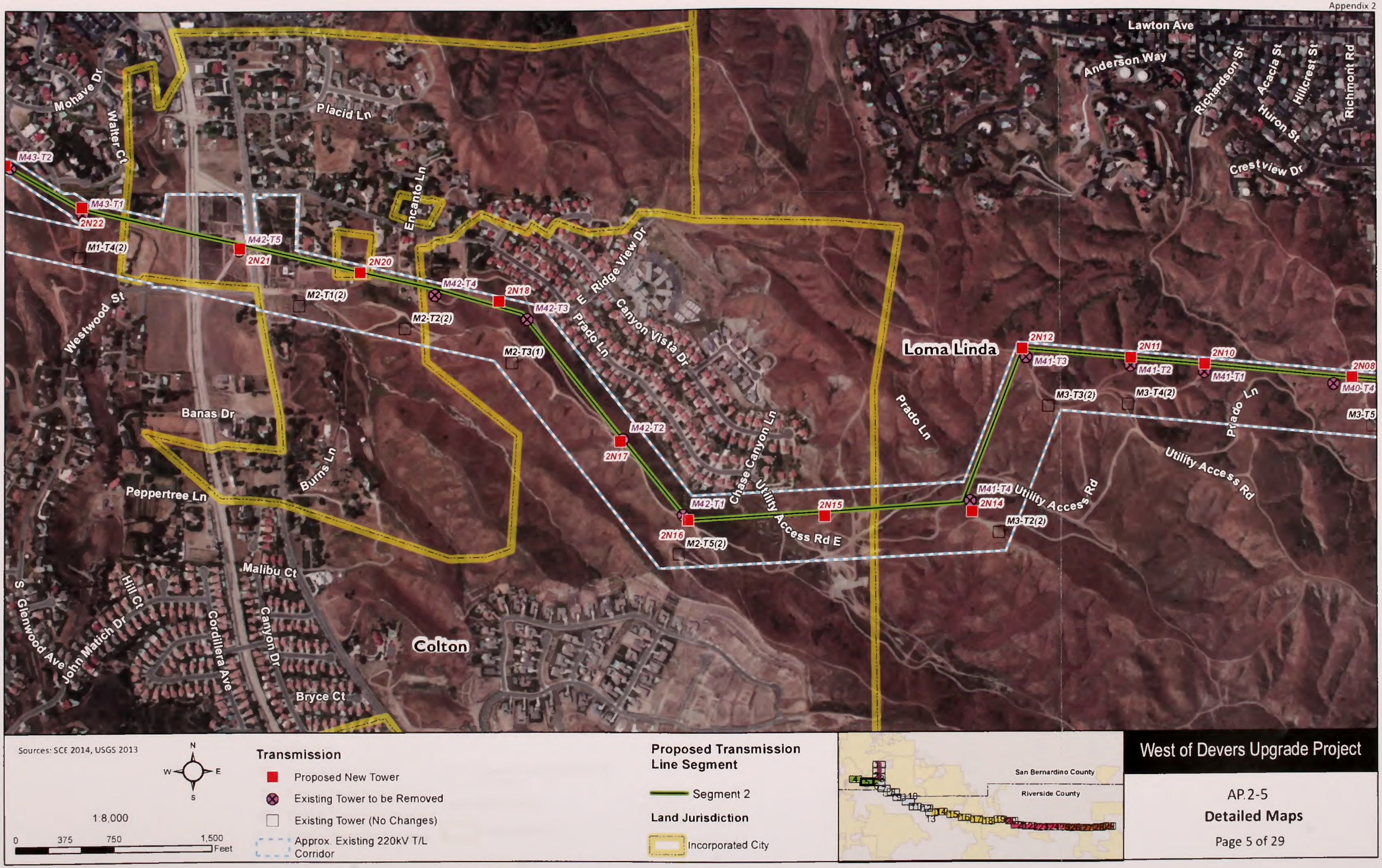

Sources: SCE 2014, USGS 2013

Transmission

- 🟥 Proposed New Tower
- ⊗ Existing Tower to be Removed
- ☐ Existing Tower (No Changes)
- Approx. Existing 220kV T/L Corridor

Proposed Transmission Line Segment

- Segment 2

Land Jurisdiction

- Incorporated City

West of Devers Upgrade Project

AP.2-5
Detailed Maps
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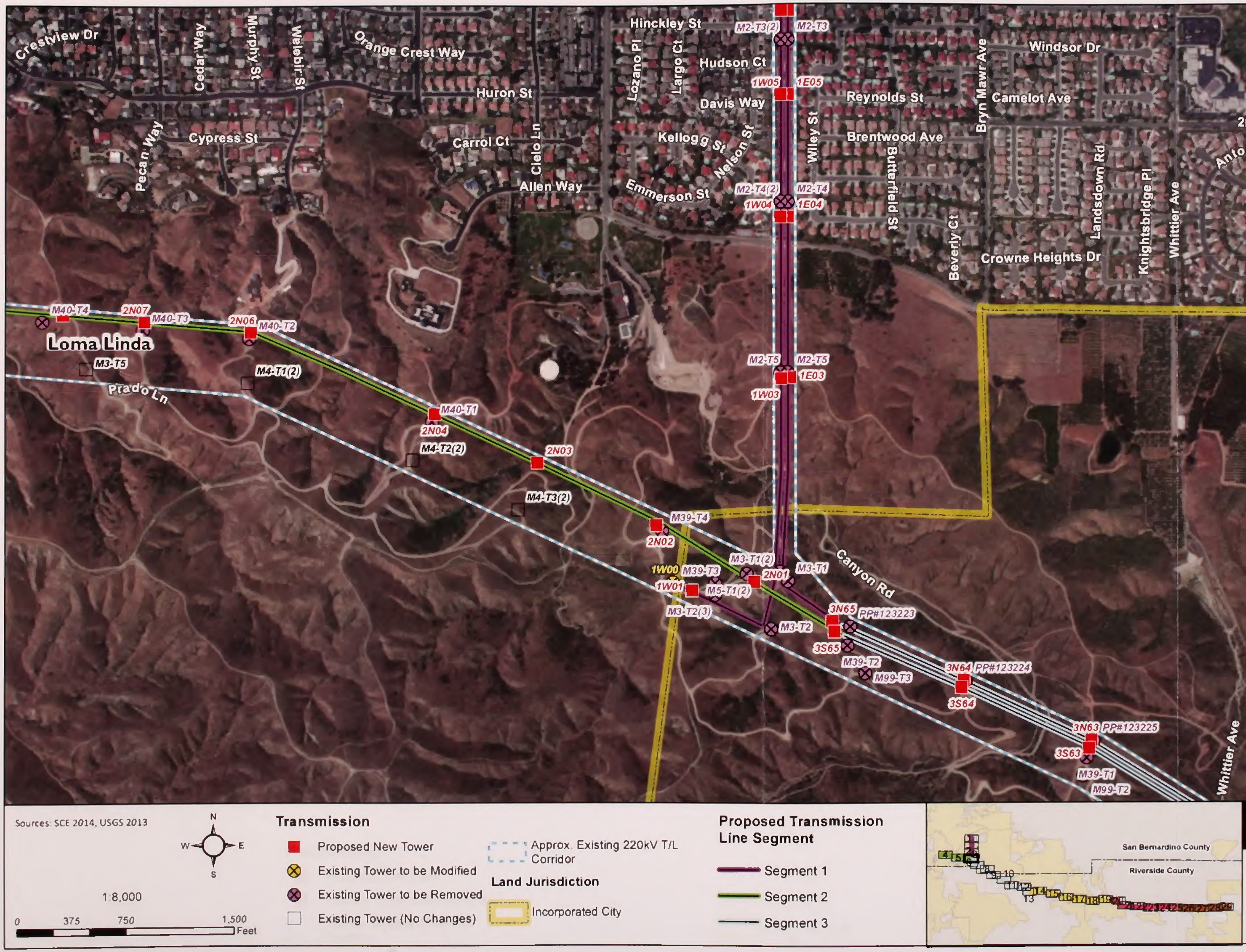

West of Devers Upgrade Project

AP.2-6
Detailed Maps
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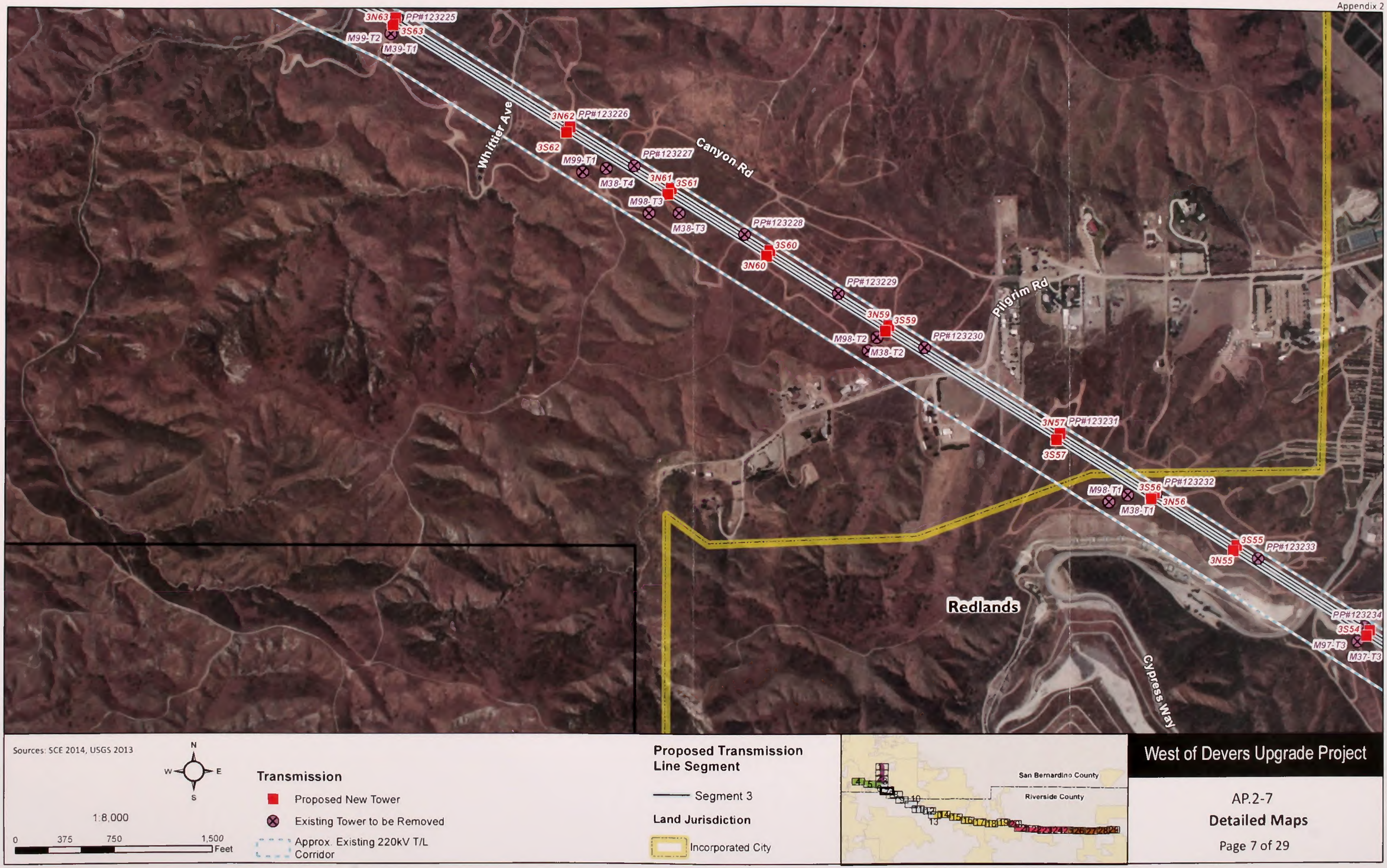

Sources: SCE 2014, USGS 2013

Transmission

🟥 Proposed New Tower

⊗ Existing Tower to be Removed

Approx. Existing 220kV T/L Corridor

Proposed Transmission Line Segment

Segment 3

Land Jurisdiction

Incorporated City

West of Devers Upgrade Project

AP.2-7

Detailed Maps

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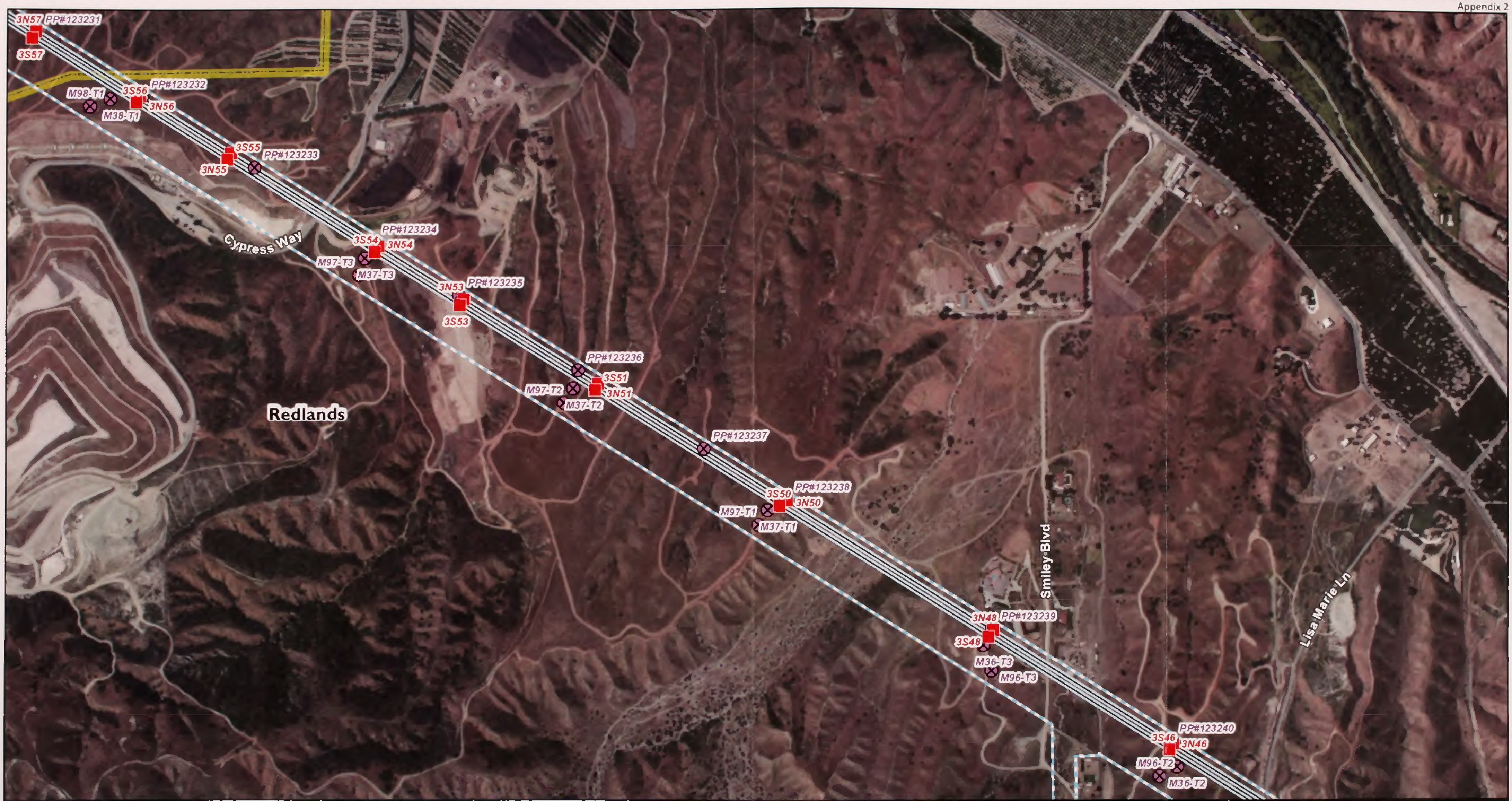

Sources: SCE 2014, USGS 2013

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Transmission

🟥 Proposed New Tower

⊗ Existing Tower to be Removed

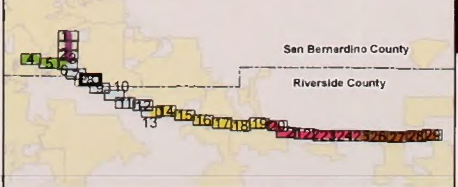
Approx. Existing 220kV T/L Corridor

Proposed Transmission Line Segment

Segment 3

Land Jurisdiction

Incorporated City



West of Devers Upgrade Project

AP.2-8

Detailed Maps

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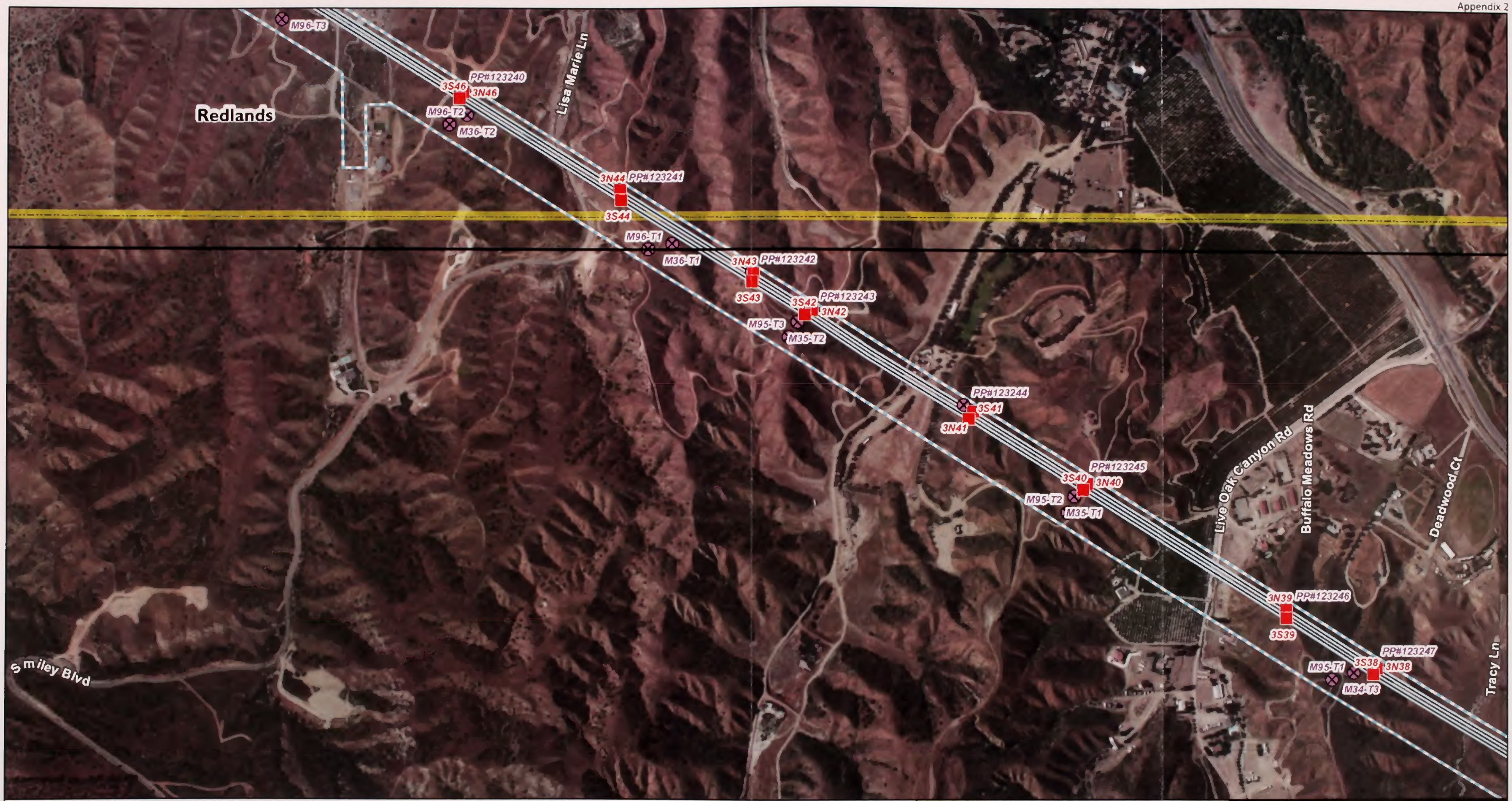

Sources: SCE 2014, USGS 2013

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Transmission

🟥 Proposed New Tower

⊗ Existing Tower to be Removed

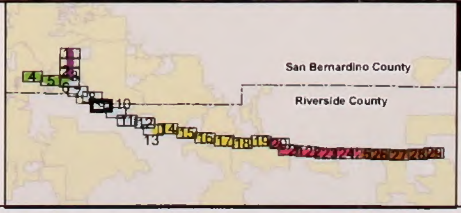
┆ Approx. Existing 220kV T/L Corridor

Proposed Transmission Line Segment

— Segment 3

Land Jurisdiction

🟨 Incorporated City



West of Devers Upgrade Project

AP.2-9

Detailed Maps

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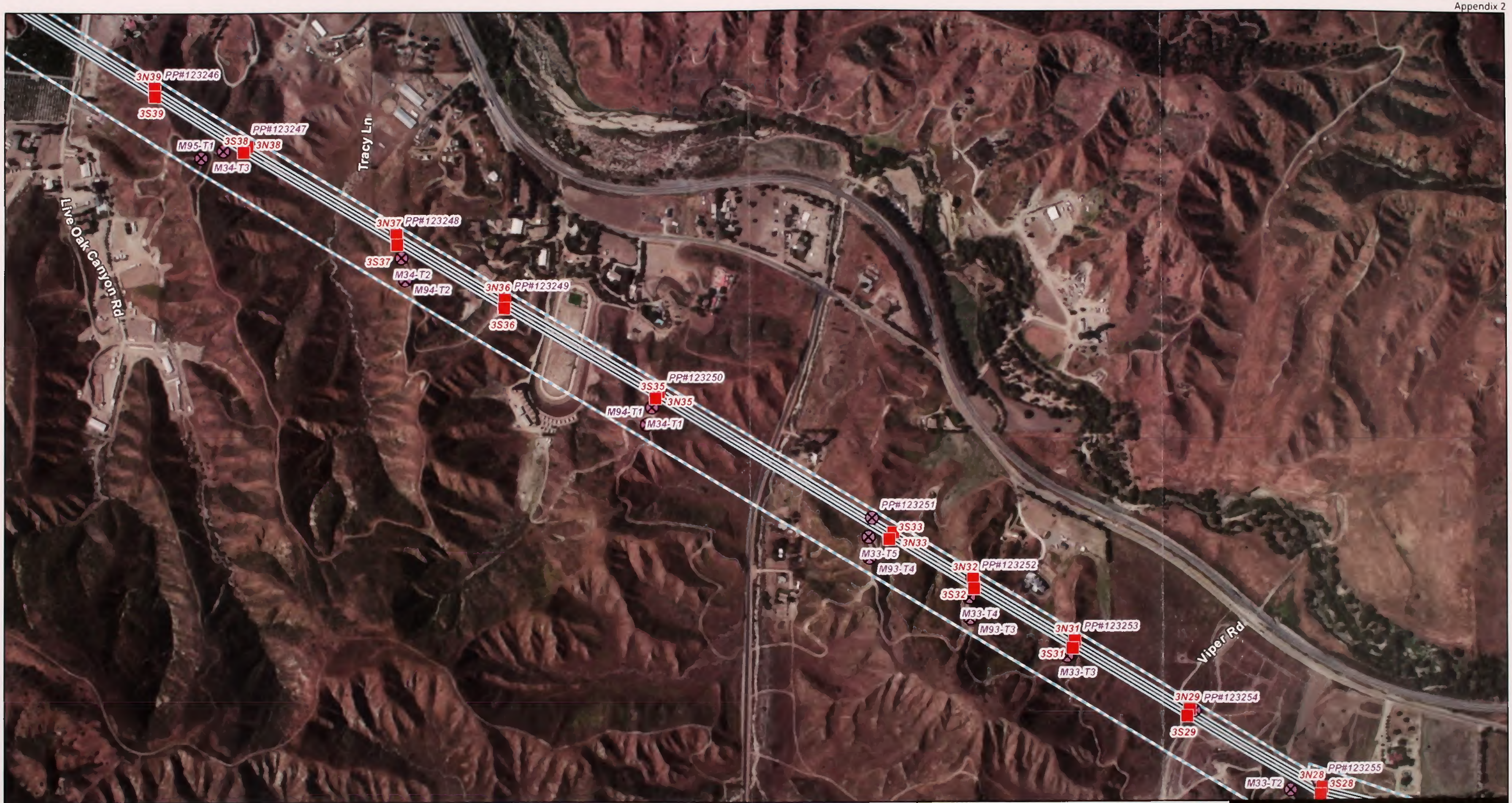


Sources: SCE 2014, USGS 2013

1:8,000

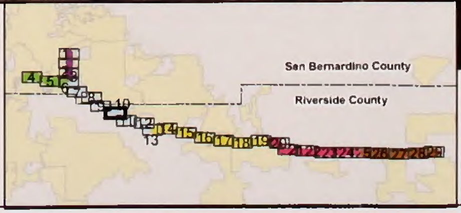
0 375 750 1,500 Feet

Transmission

- 🟥 Proposed New Tower
- ⊗ Existing Tower to be Removed
- ▭ Approx. Existing 220kV T/L Corridor

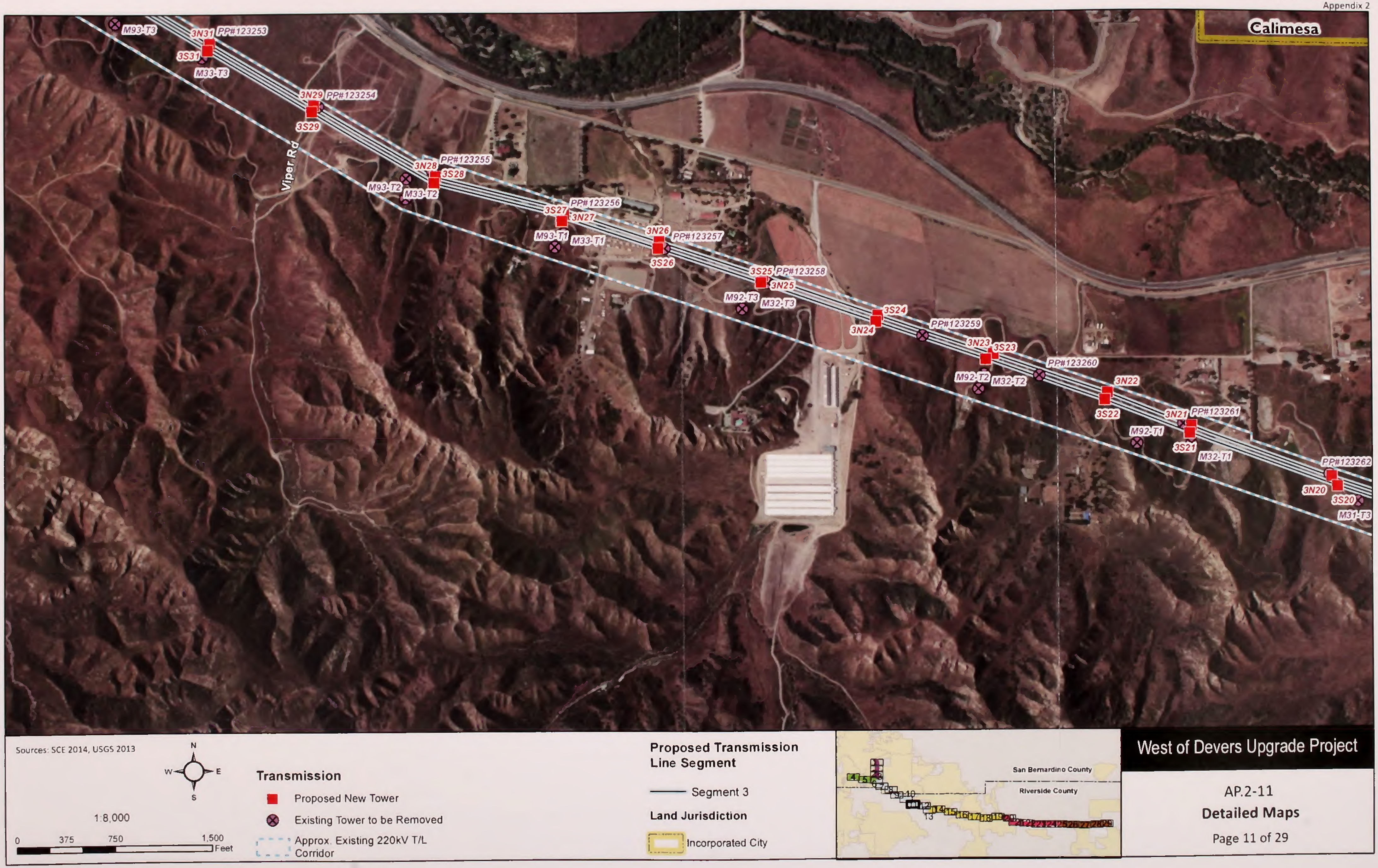
Proposed Transmission Line Segment

- — Segment 3



West of Devers Upgrade Project

AP.2-10
Detailed Maps



Sources: SCE 2014, USGS 2013

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Transmission

- 🟥 Proposed New Tower
- ⊗ Existing Tower to be Removed
- ▭ Approx. Existing 220kV T/L Corridor

Proposed Transmission Line Segment

- — Segment 3

Land Jurisdiction

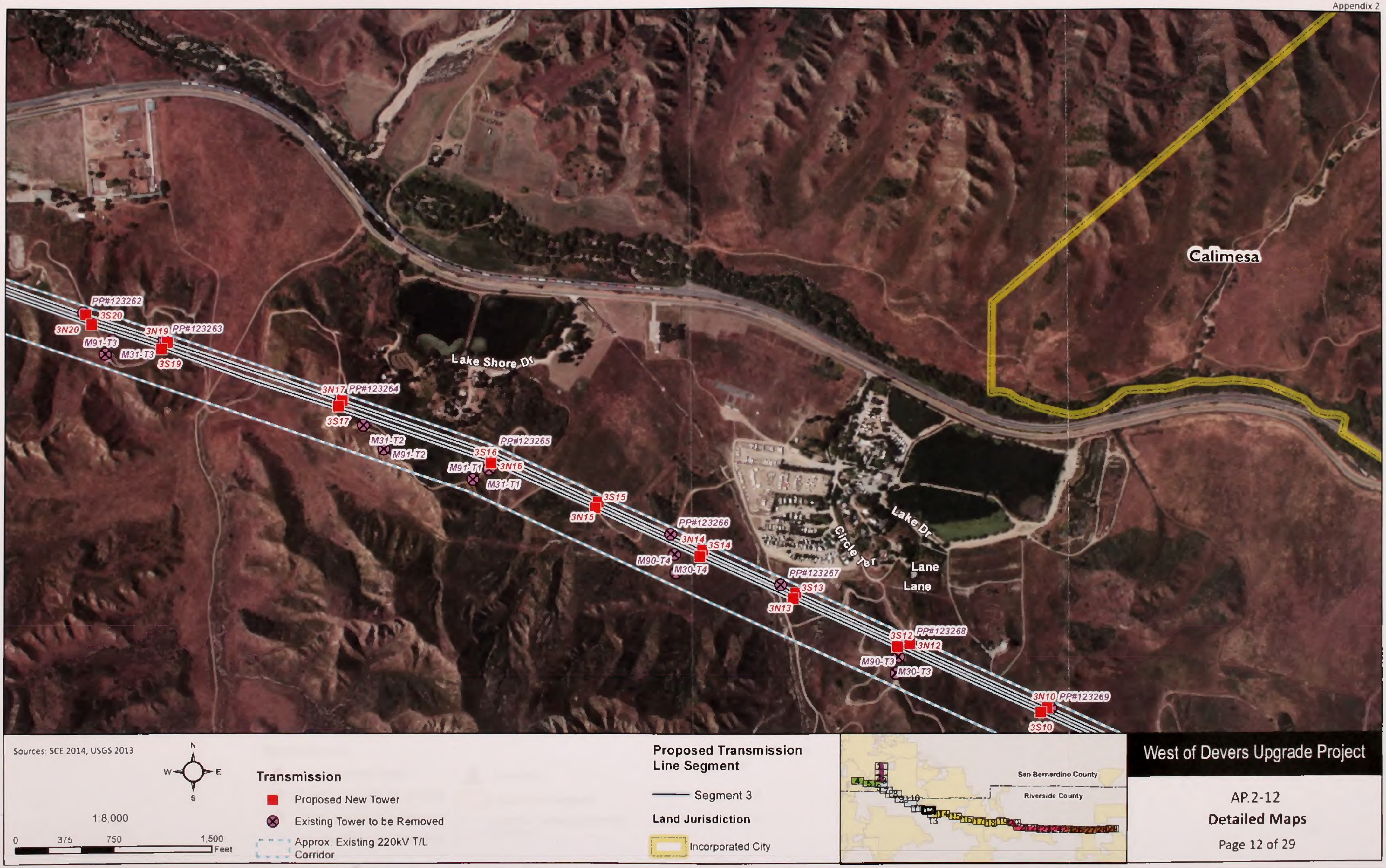
- ▭ Incorporated City

West of Devers Upgrade Project

AP.2-11

Detailed Maps

Page 11 of 29



Sources: SCE 2014, USGS 2013

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Transmission

🟥 Proposed New Tower

⊗ Existing Tower to be Removed

Approx. Existing 220kV T/L Corridor

Proposed Transmission Line Segment

Segment 3

Land Jurisdiction

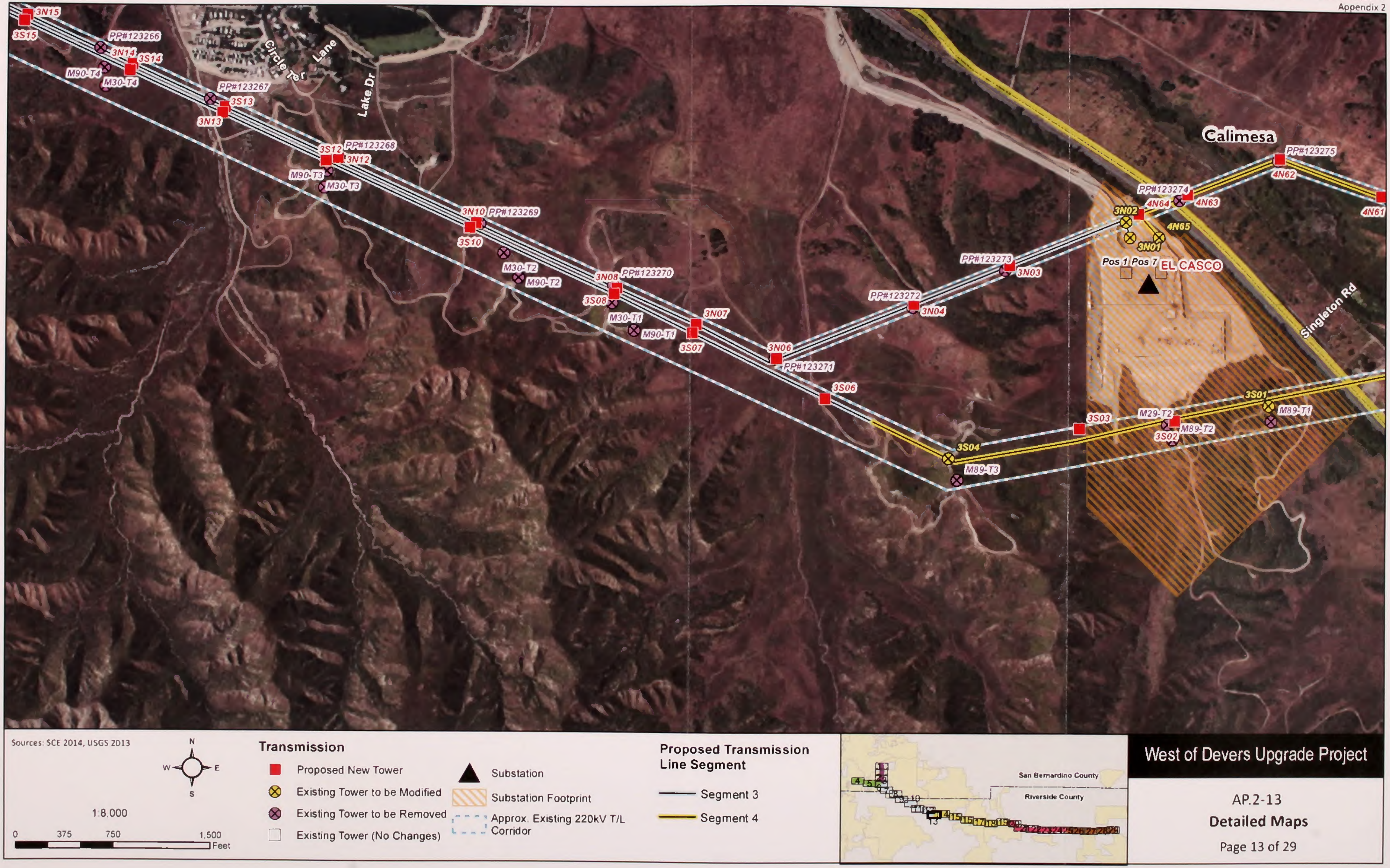
Incorporated City

West of Devers Upgrade Project

AP.2-12

Detailed Maps

Page 12 of 29



West of Devers Upgrade Project

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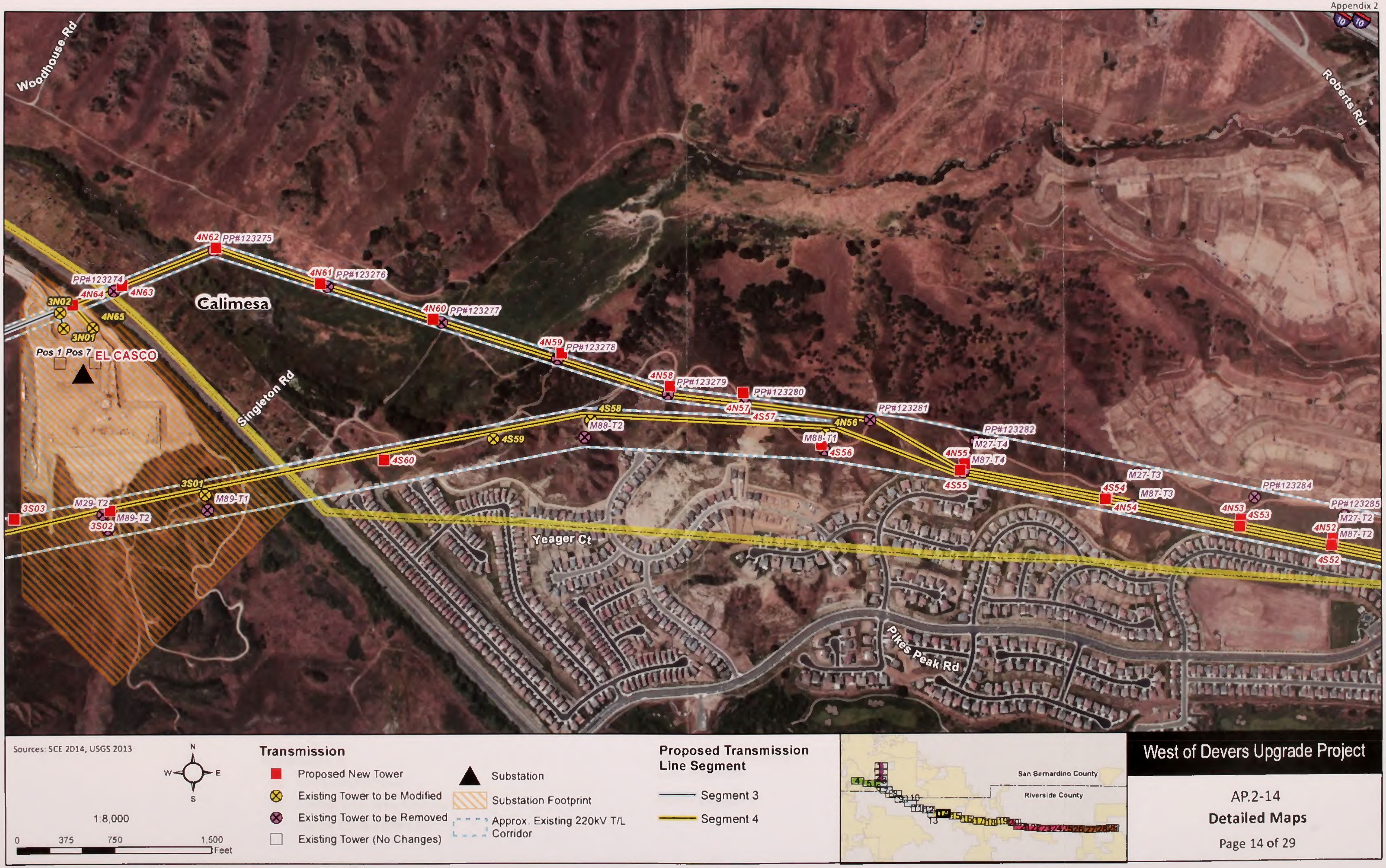

Sources: SCE 2014, USGS 2013

West of Devers Upgrade Project

AP.2-14

Detailed Maps

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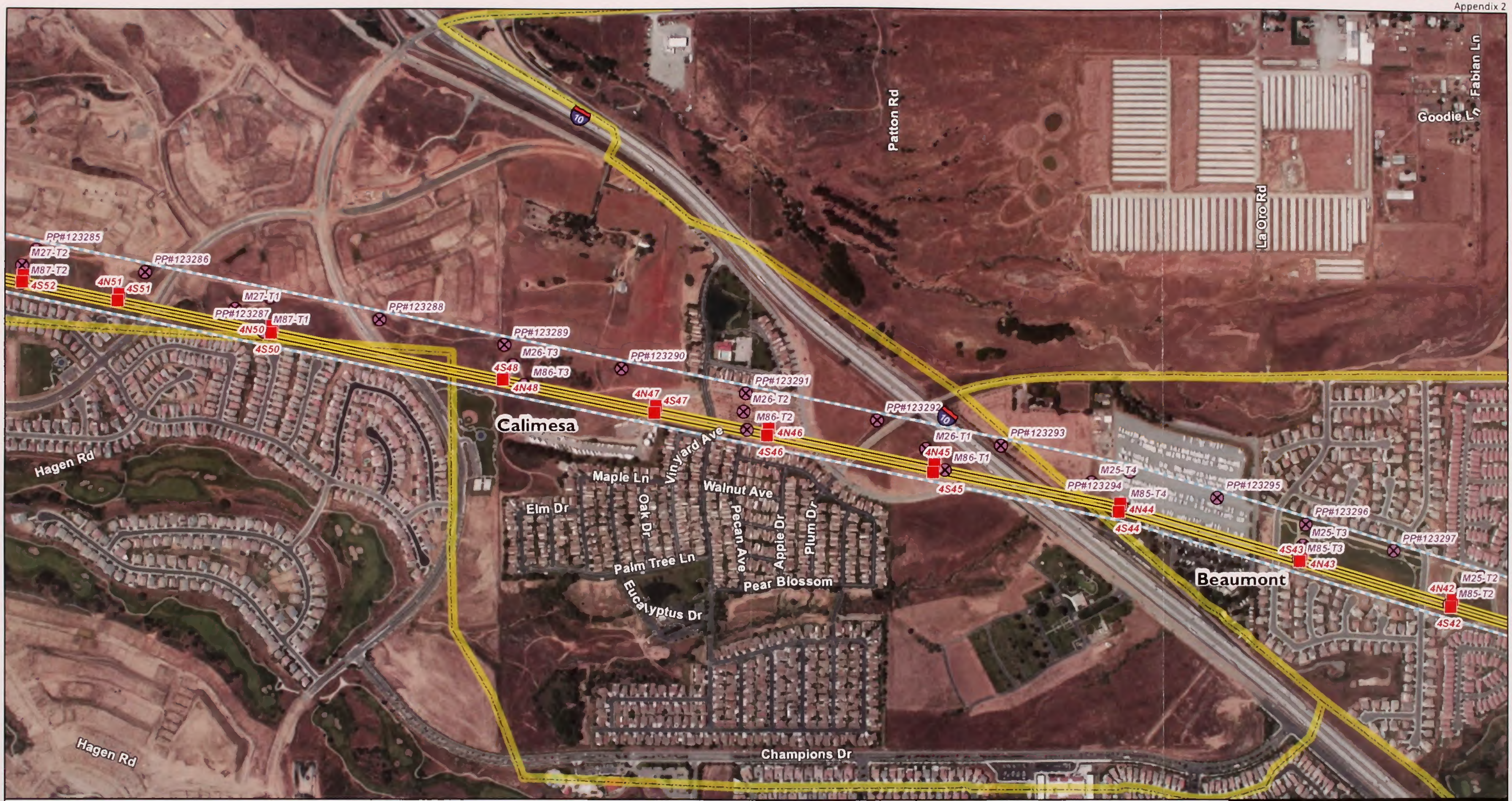

Sources: SCE 2014, USGS 2013

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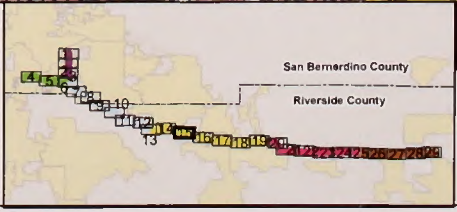
0 375 750 1,500 Feet

Transmission

- 🟥 Proposed New Tower
- ⊗ Existing Tower to be Removed
- ▭ Approx. Existing 220kV T/L Corridor

Proposed Transmission Line Segment

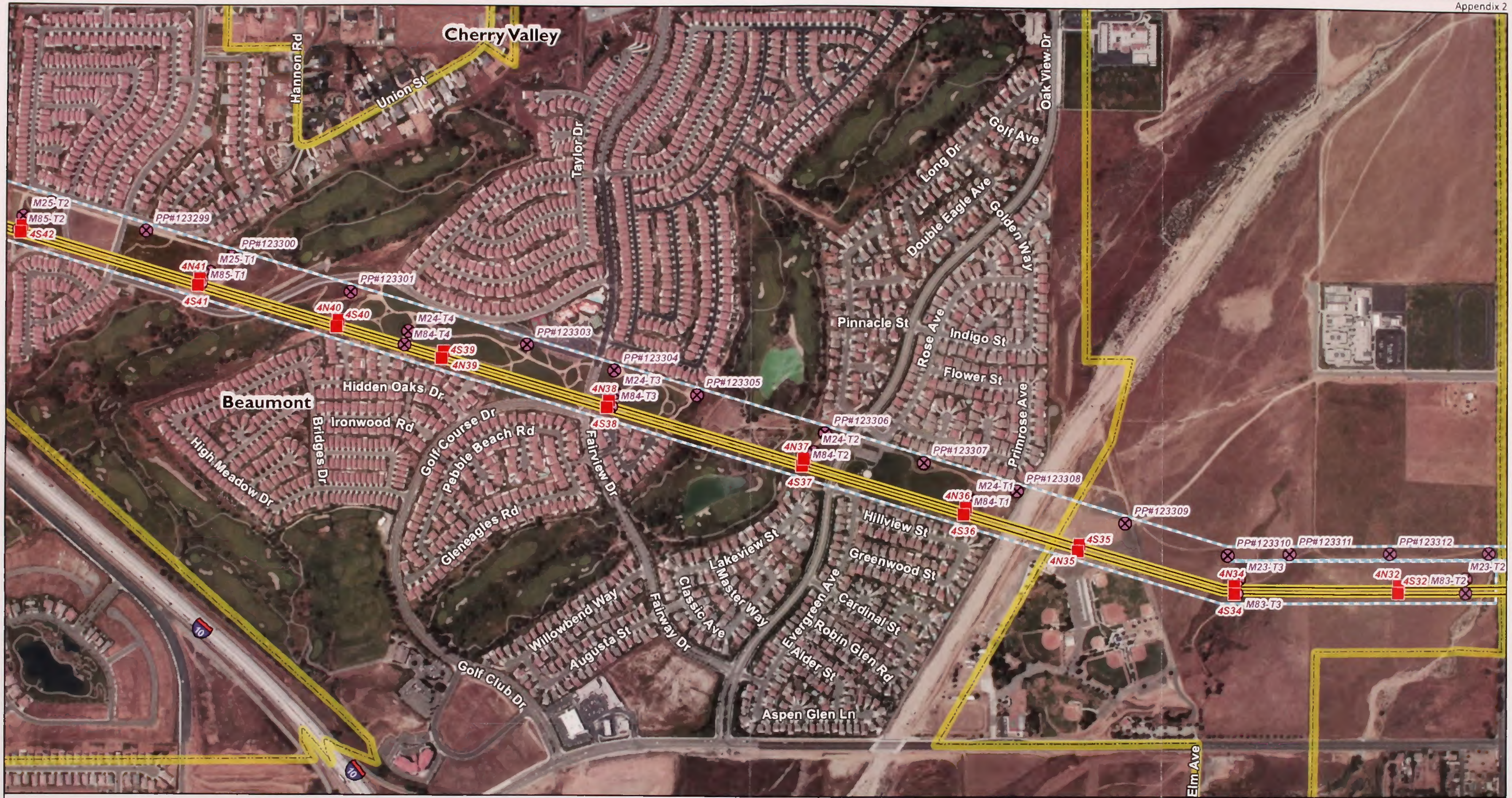
- — Segment 4



West of Devers Upgrade Project

AP.2-15

Detailed Maps



Sources: SCE 2014, USGS 2013

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Transmission

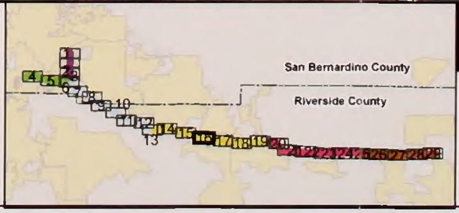
- 🟥 Proposed New Tower
- ⊗ Existing Tower to be Removed
- ┄ Approx. Existing 220kV T/L Corridor

Land Jurisdiction

- ▭ Incorporated City

Proposed Transmission Line Segment

- ━ Segment 4

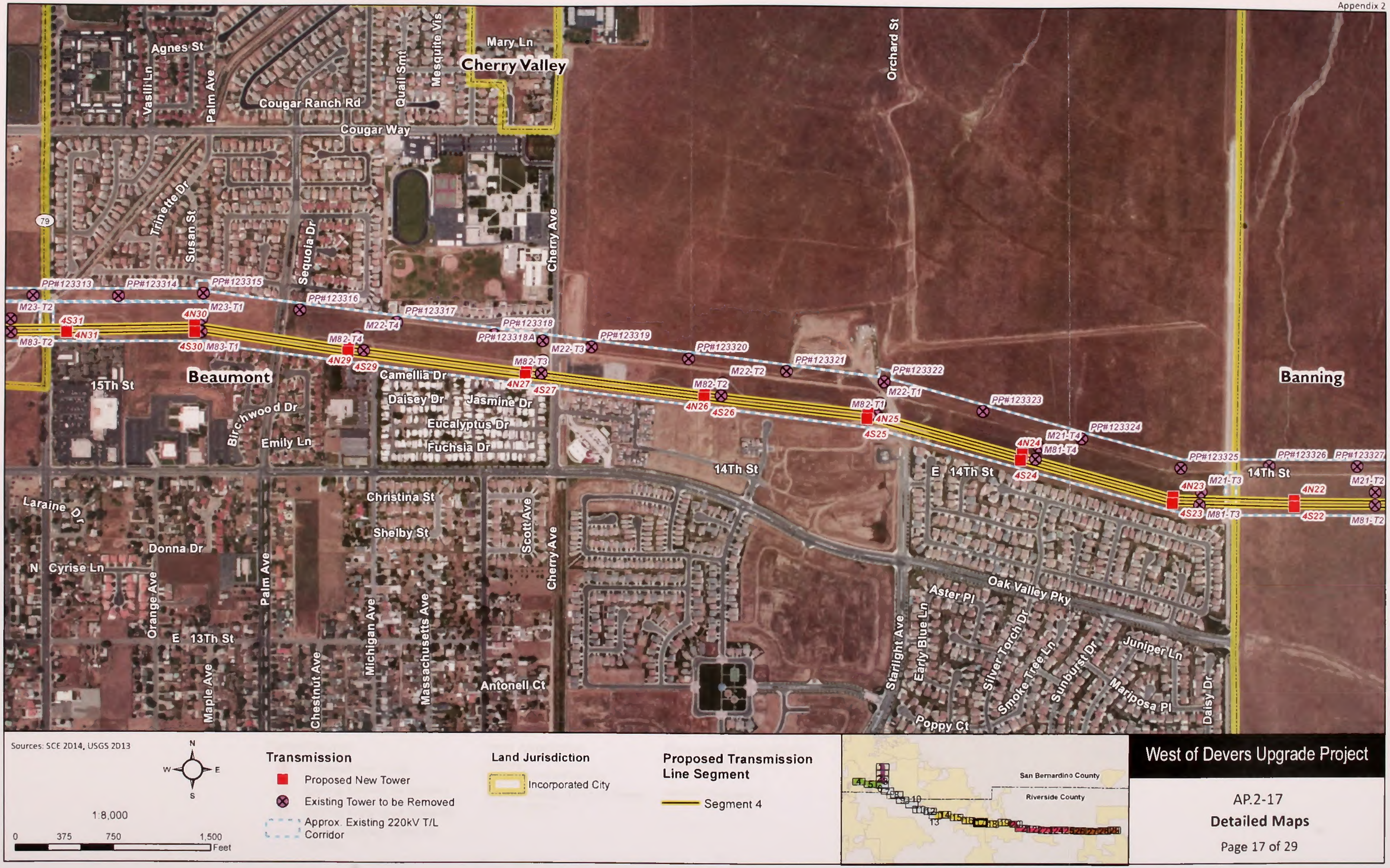


West of Devers Upgrade Project

AP.2-16

Detailed Maps

Page 16 of 29



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Transmission

🟥 Proposed New Tower

⊗ Existing Tower to be Removed

▭ Approx. Existing 220kV T/L Corridor

Land Jurisdiction

▭ Incorporated City

Proposed Transmission Line Segment

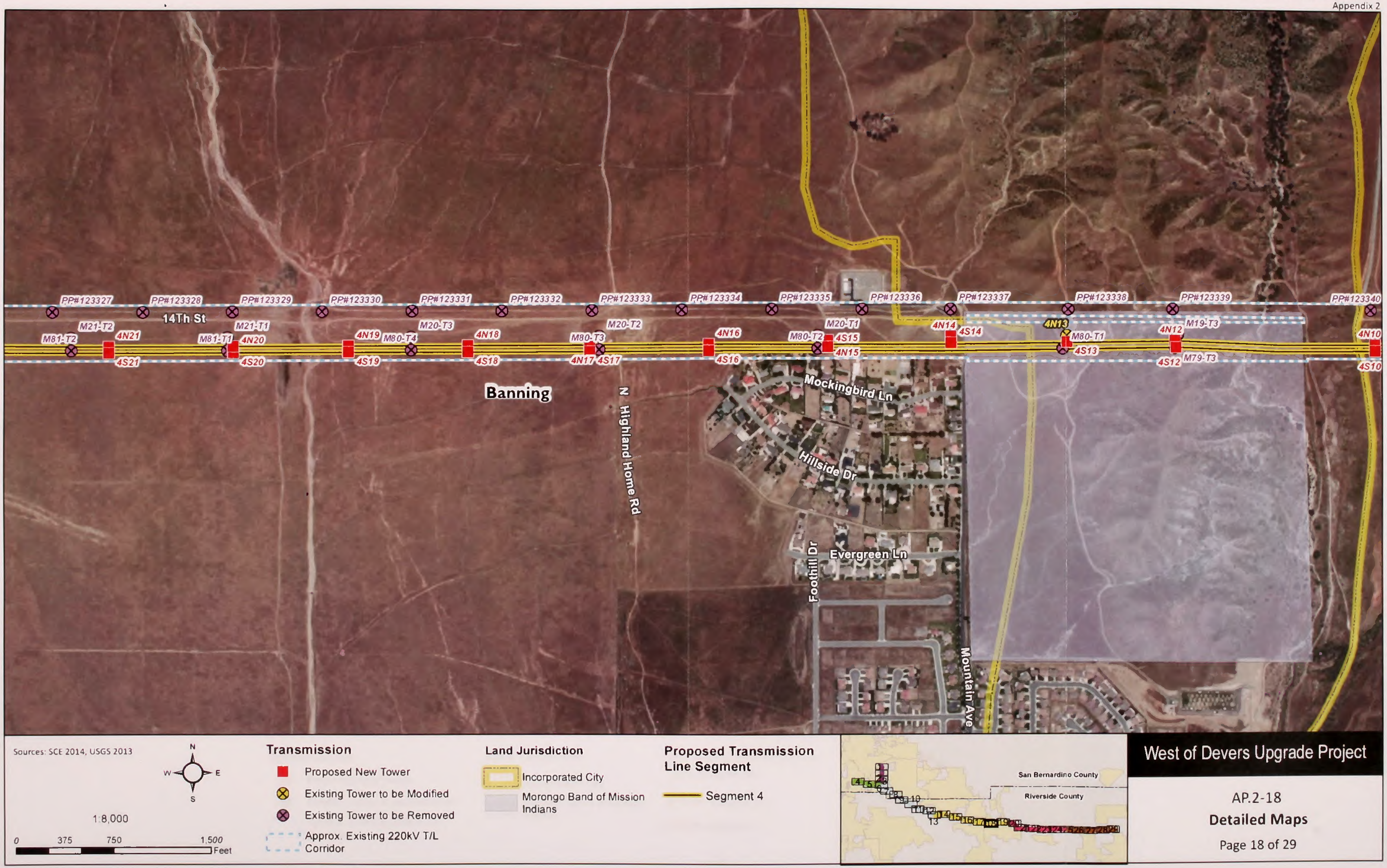
— Segment 4

West of Devers Upgrade Project

AP.2-17

Detailed Maps

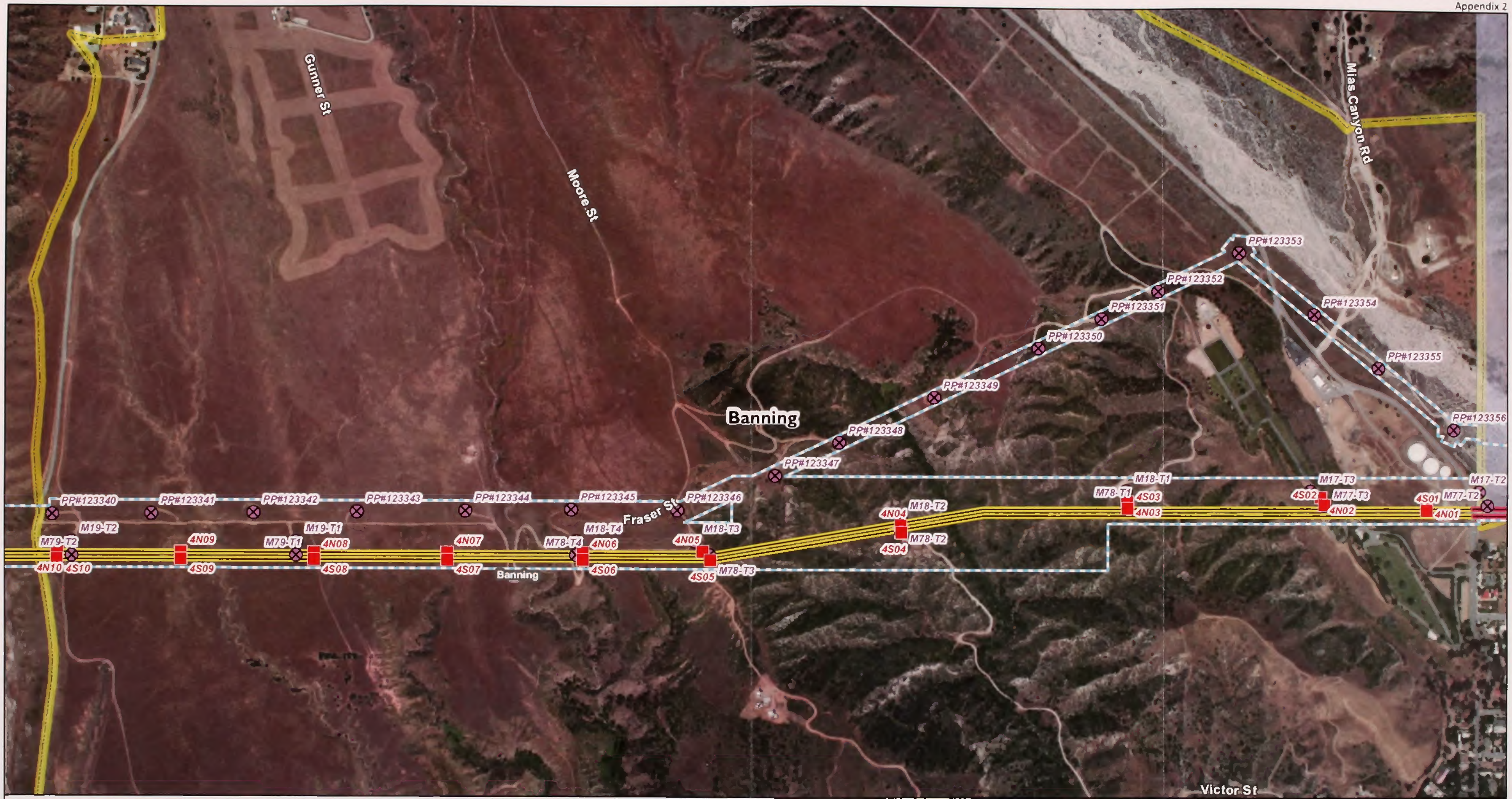
Page 17 of 29



West of Devers Upgrade Project

AP.2-18

Detailed Maps



Sources: SCE 2014, USGS 2013

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Transmission

🟥 Proposed New Tower

⊗ Existing Tower to be Removed

⬚ Approx. Existing 220kV T/L Corridor

Land Jurisdiction

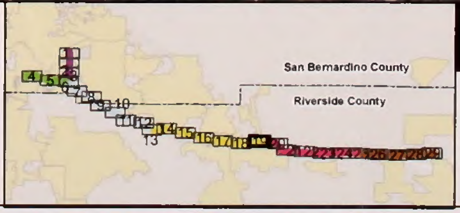
🟨 Incorporated City

⬜ Morongo Band of Mission Indians

Proposed Transmission Line Segment

— Segment 4

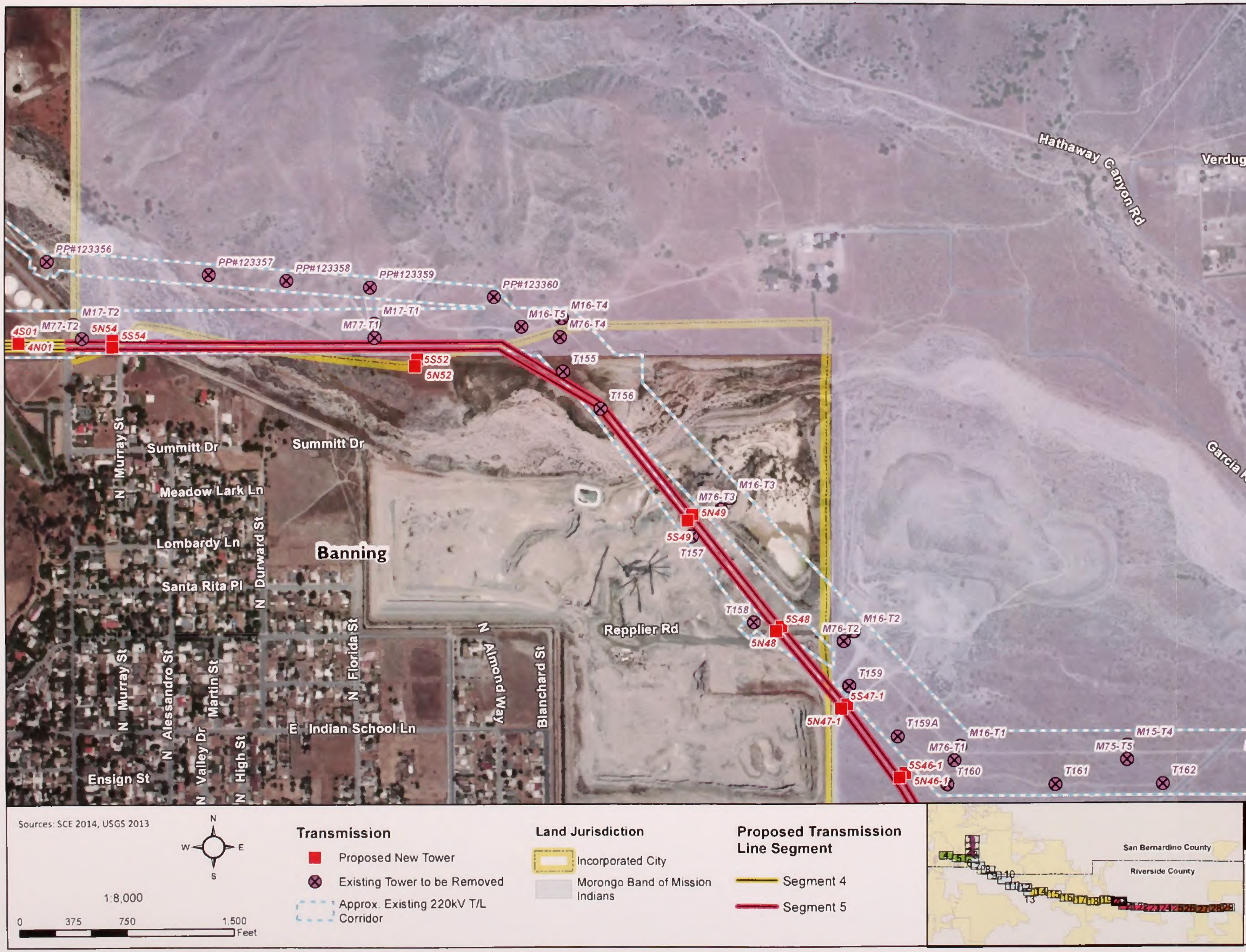
— Segment 5



West of Devers Upgrade Project

AP.2-19

Detailed Maps



West of Devers Upgrade Project

AP.2-20

Detailed Maps

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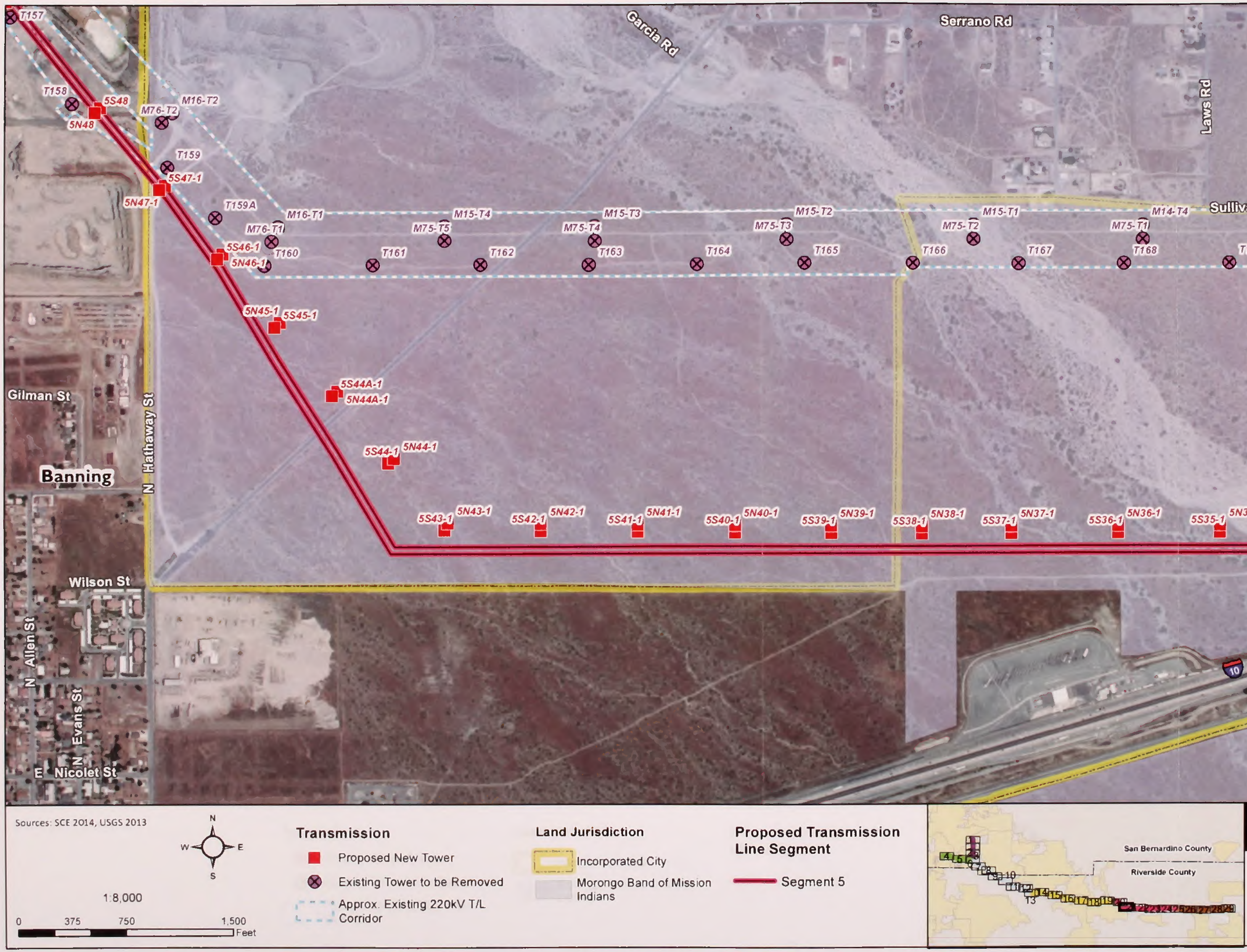
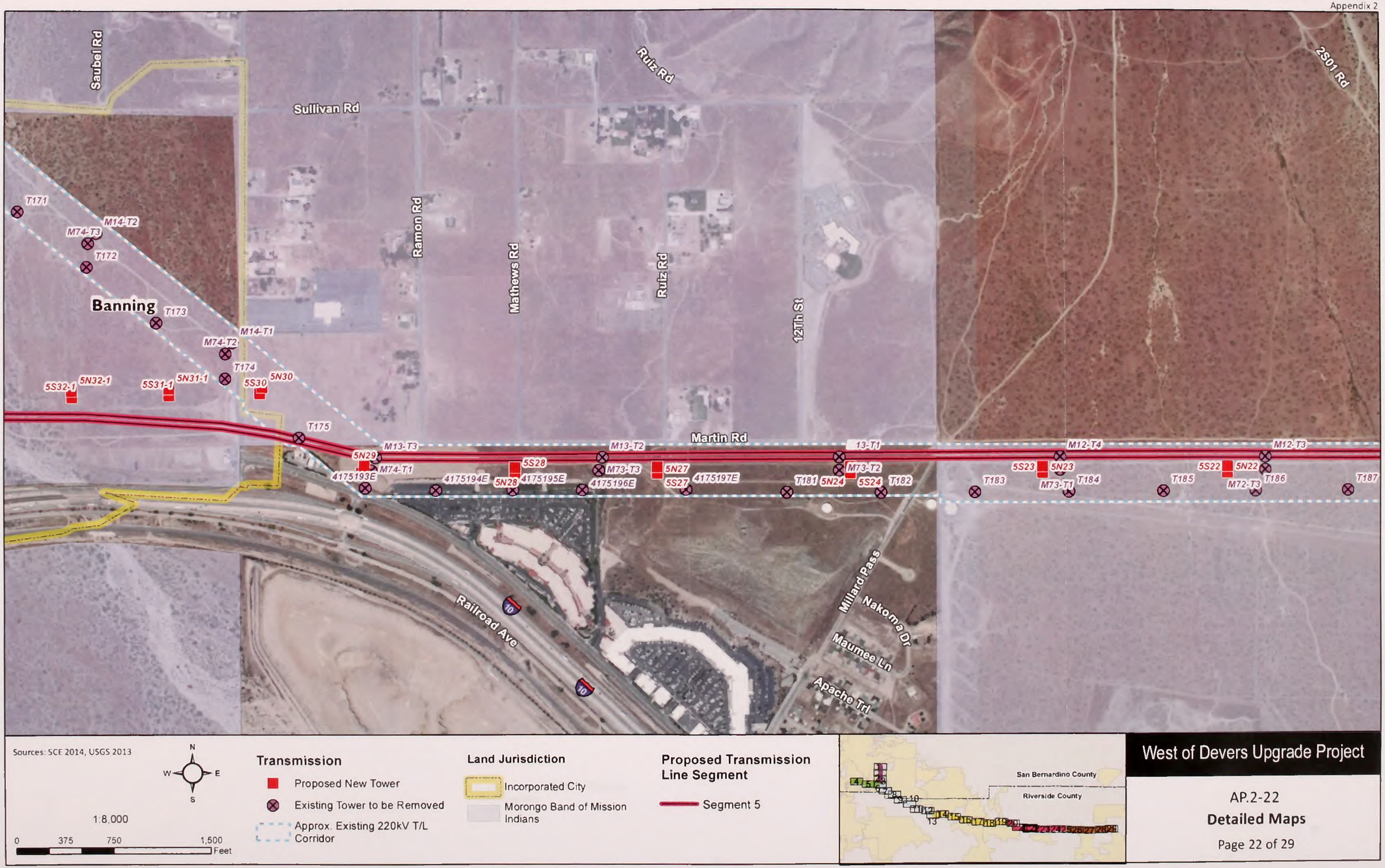


West of Devers Upgrade Project

AP.2-21
Detailed Maps



West of Devers Upgrade Project

AP.2-22

Detailed Maps

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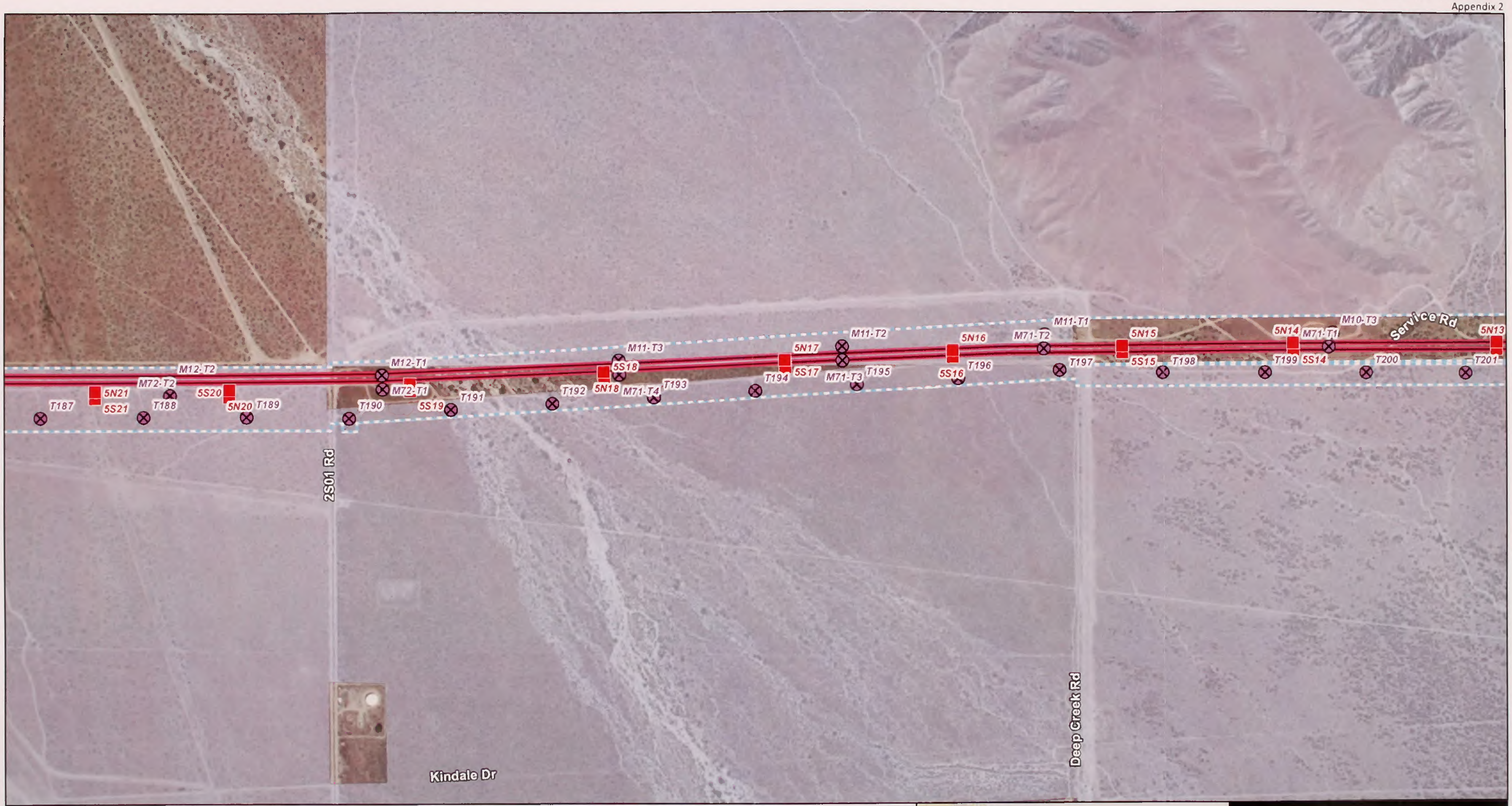

Sources: SCE 2014, USGS 2013

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Transmission

🟥 Proposed New Tower

⊗ Existing Tower to be Removed

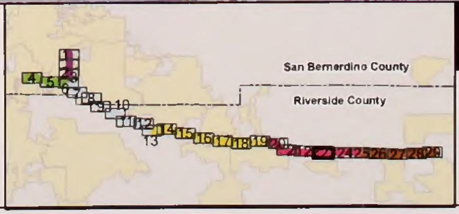
⬚ Approx. Existing 220kV T/L Corridor

Land Jurisdiction

▭ Morongo Band of Mission Indians

Proposed Transmission Line Segment

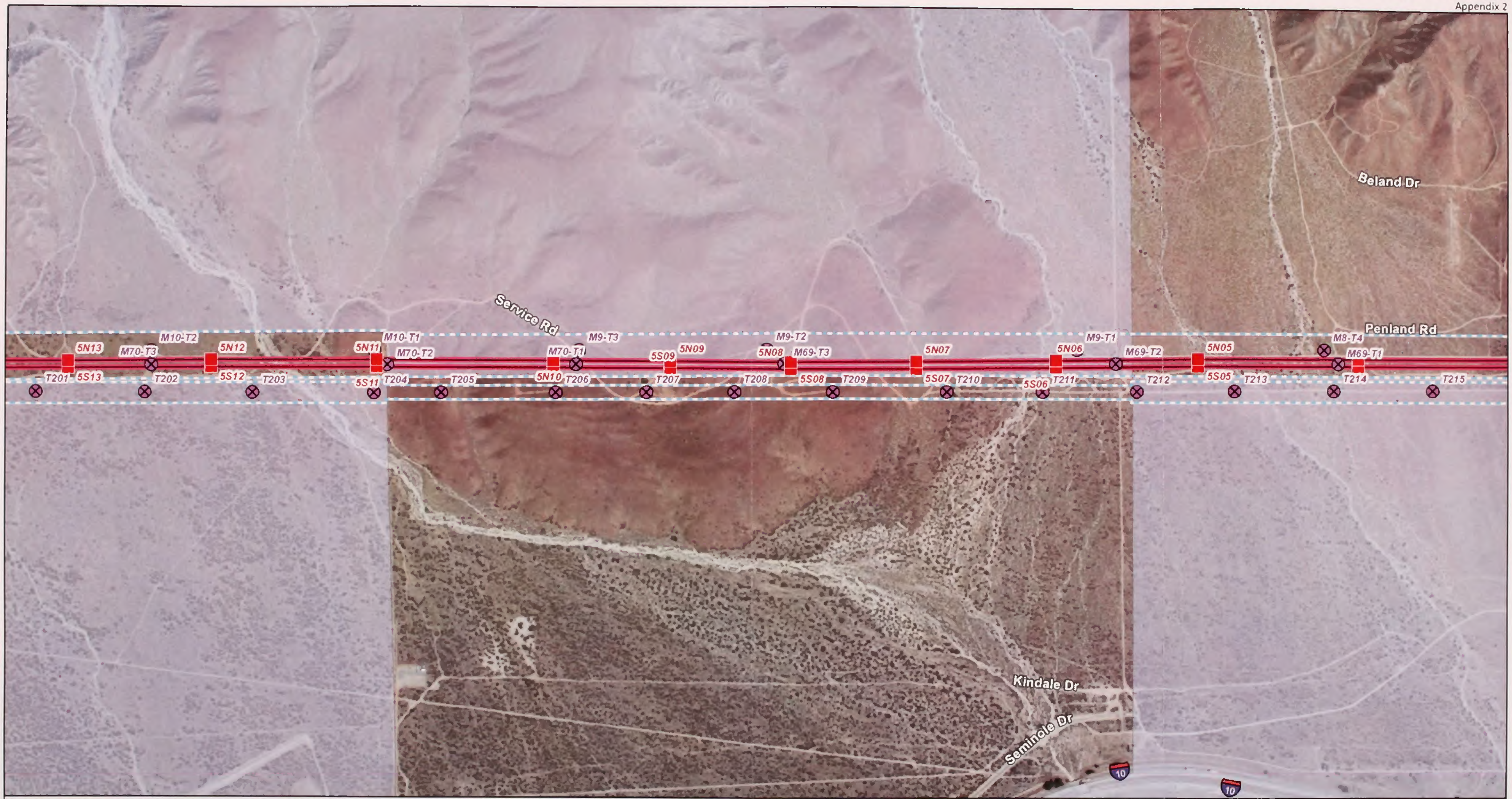
— Segment 5



West of Devers Upgrade Project

AP.2-23

Detailed Maps



Sources: SCE 2014, USGS 2013

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Transmission

🟥 Proposed New Tower

⊗ Existing Tower to be Removed

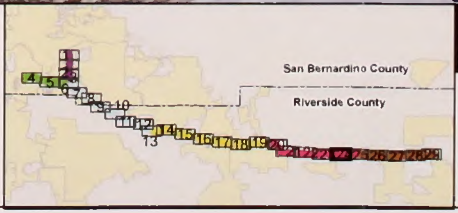
┆ Approx. Existing 220kV T/L Corridor

Land Jurisdiction

▭ Morongo Band of Mission Indians

Proposed Transmission Line Segment

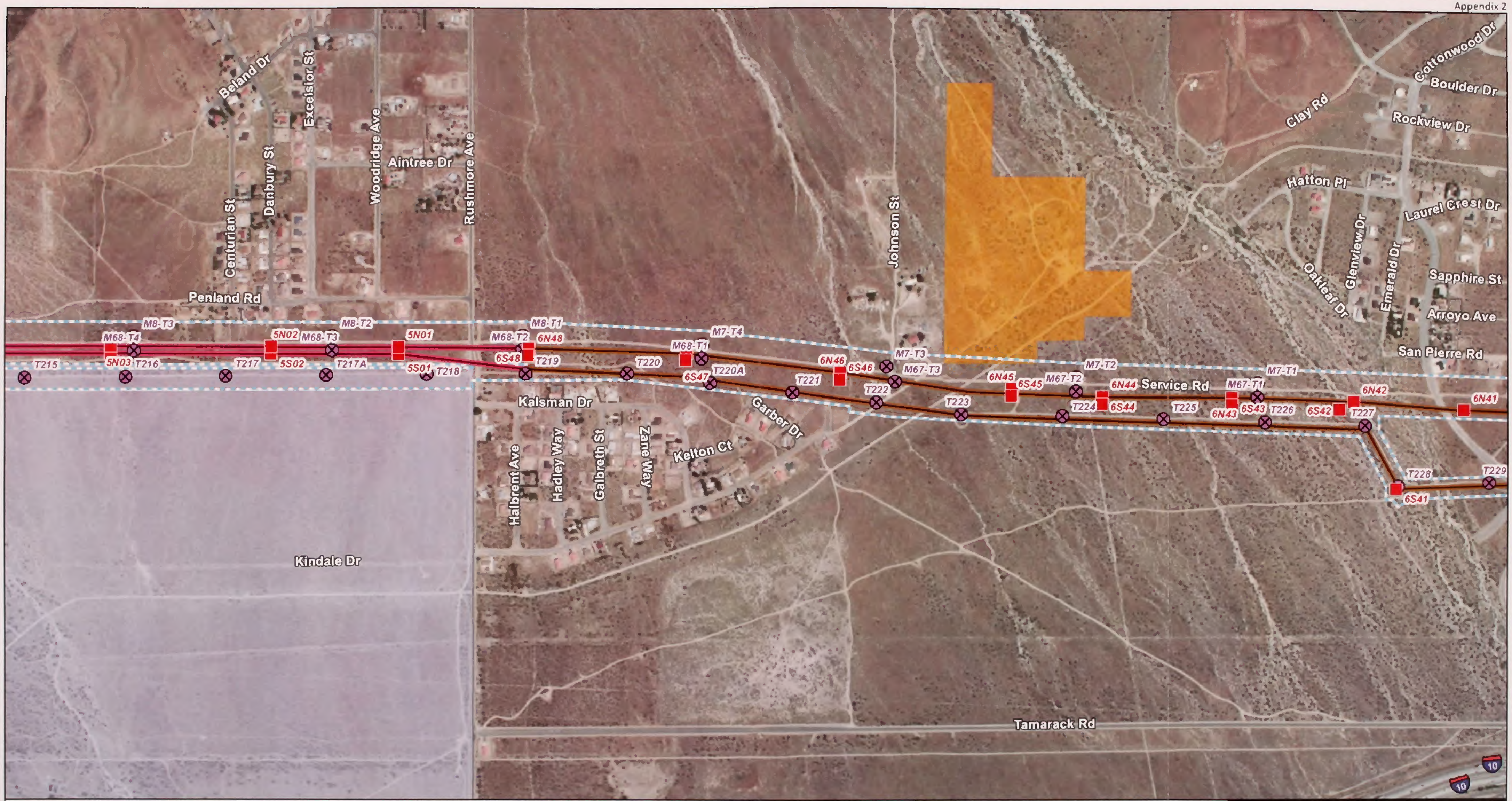
— Segment 5



West of Devers Upgrade Project

AP.2-24

Detailed Maps



Sources: SCE 2014, USGS 2013

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Transmission

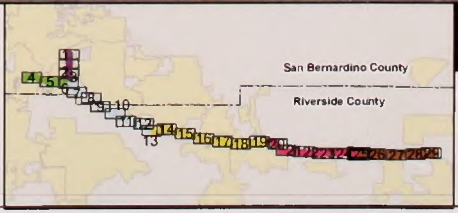
- 🟥 Proposed New Tower
- ⊗ Existing Tower to be Removed
- ⬚ Approx. Existing 220kV T/L Corridor

Land Jurisdiction

- ▨ Morongo Band of Mission Indians
- 🟧 Bureau of Land Management

Proposed Transmission Line Segment

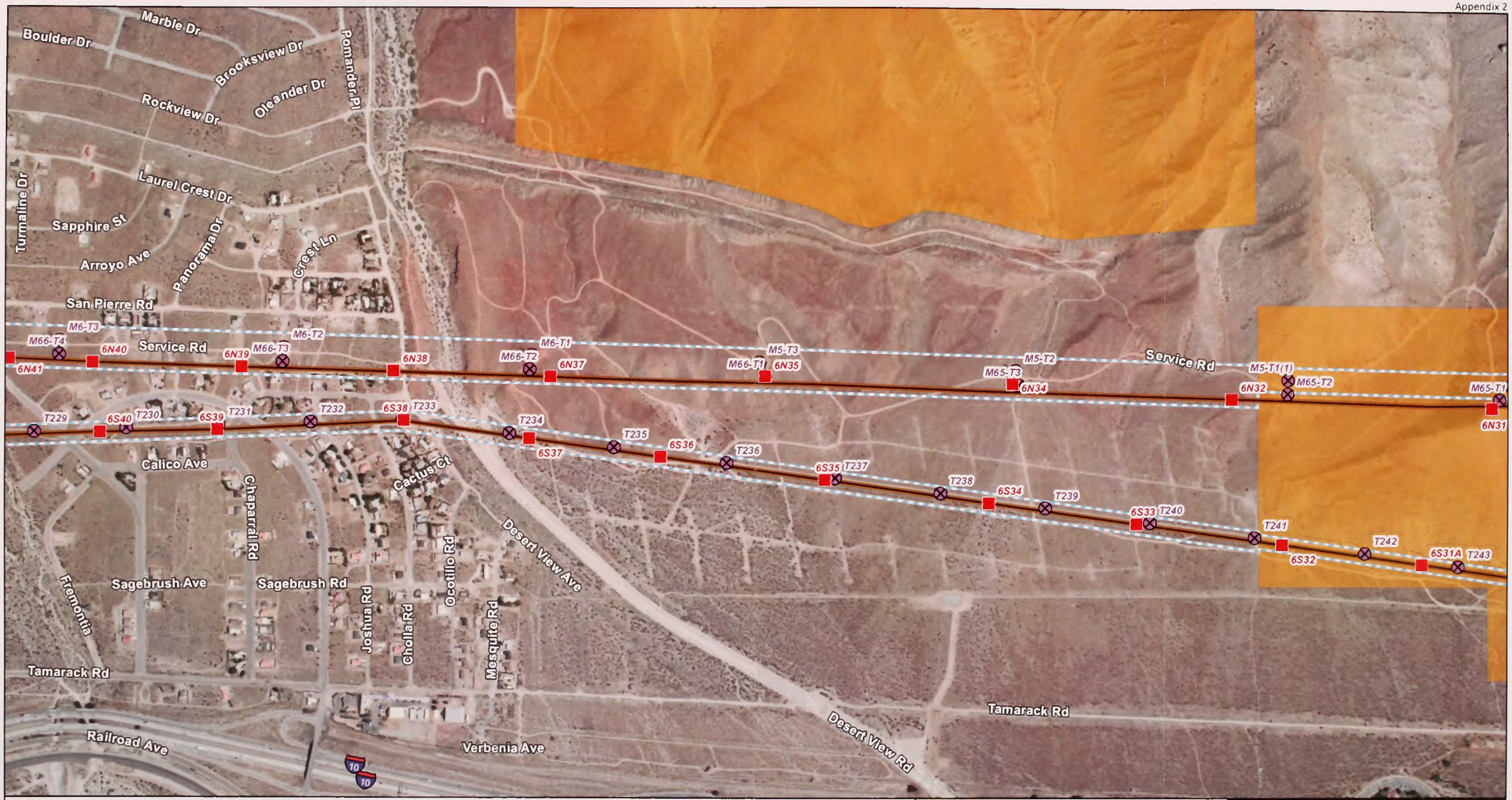
- — Segment 5
- — Segment 6



West of Devers Upgrade Project

AP.2-25

Detailed Maps



Sources: SCE 2014, USGS 2013

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Transmission

🟥 Proposed New Tower

⊗ Existing Tower to be Removed

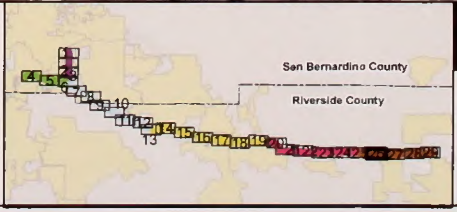
▭ Approx. Existing 220kV T/L Corridor

Land Jurisdiction

🟧 Bureau of Land Management

Proposed Transmission Line Segment

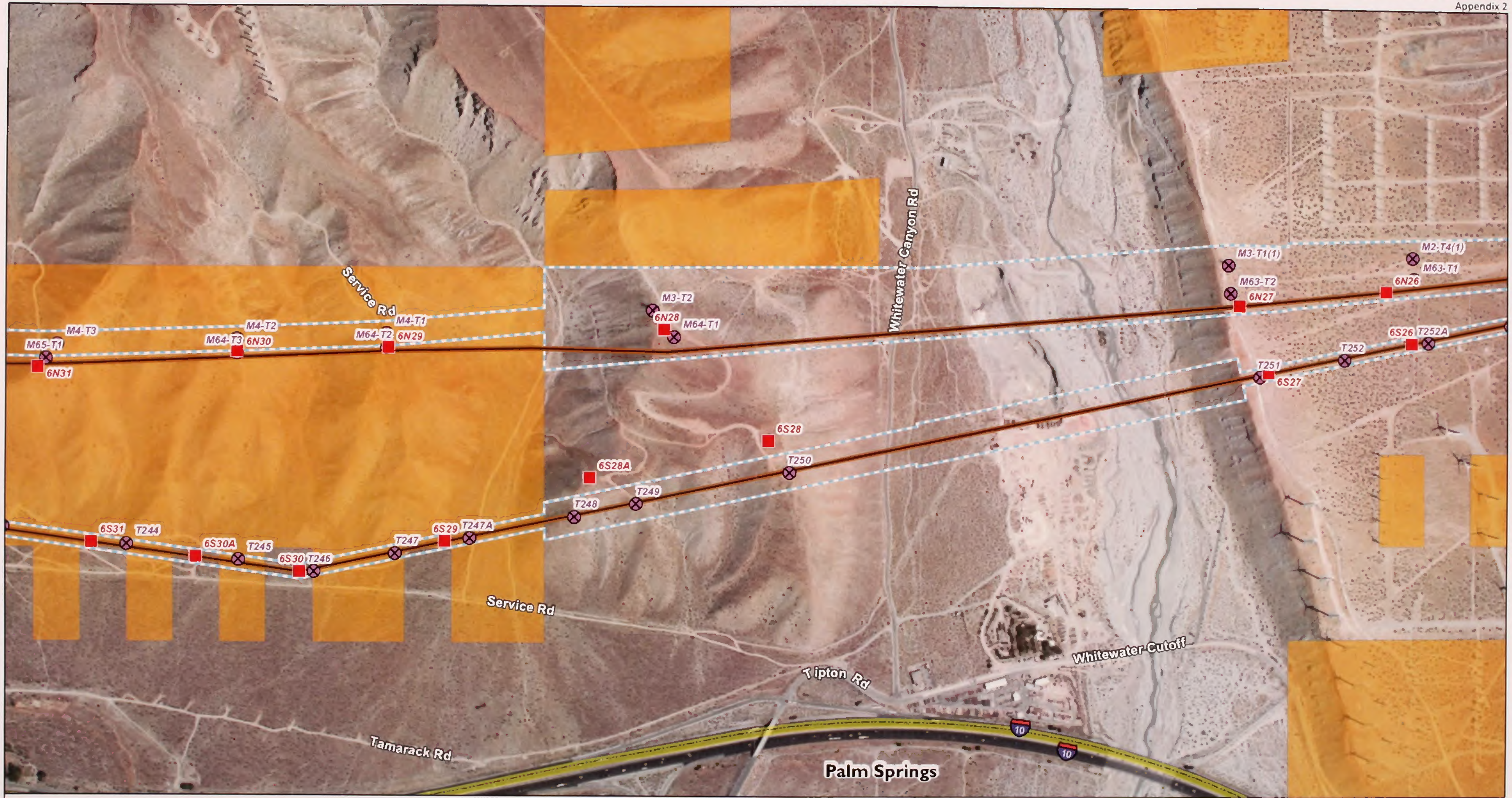
— Segment 6



West of Devers Upgrade Project

AP.2-26

Detailed Maps



Sources: SCE 2014, USGS 2013

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Transmission

🟥 Proposed New Tower

⊗ Existing Tower to be Removed

▭ Approx. Existing 220kV T/L Corridor

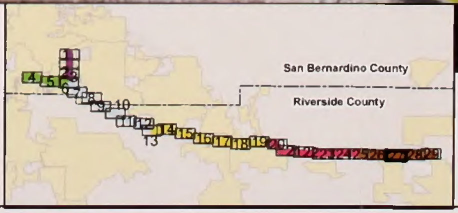
Land Jurisdiction

▭ Incorporated City

🟧 Bureau of Land Management

Proposed Transmission Line Segment

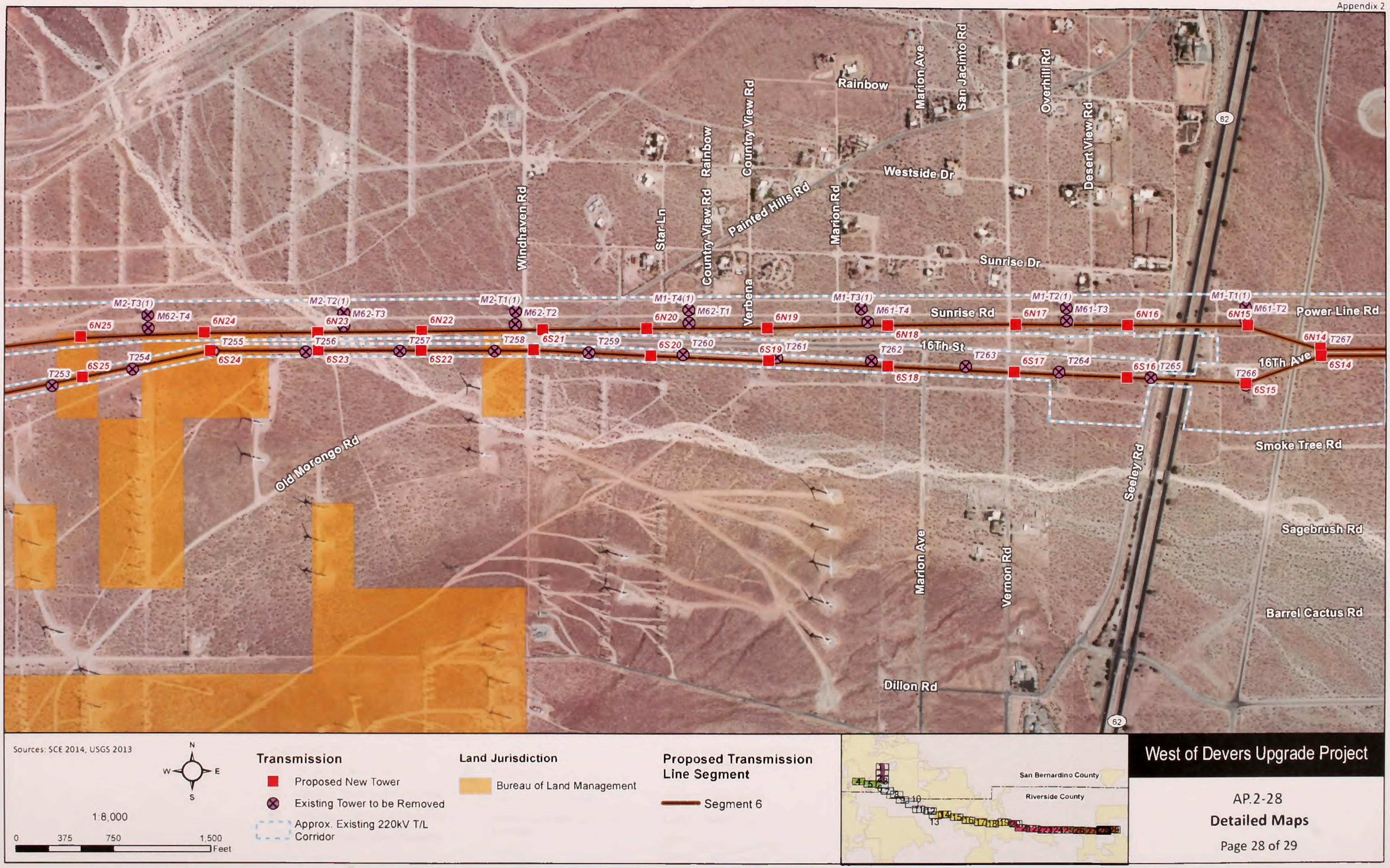
— Segment 6



West of Devers Upgrade Project

AP.2-27

Detailed Maps



Sources: SCE 2014, USGS 2013

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0 375 750 1,500 Feet

Transmission

🟥 Proposed New Tower

⊗ Existing Tower to be Removed

┅ Approx. Existing 220kV T/L Corridor

Land Jurisdiction

🟧 Bureau of Land Management

Proposed Transmission Line Segment

━ Segment 6

West of Devers Upgrade Project

AP.2-28

Detailed Maps

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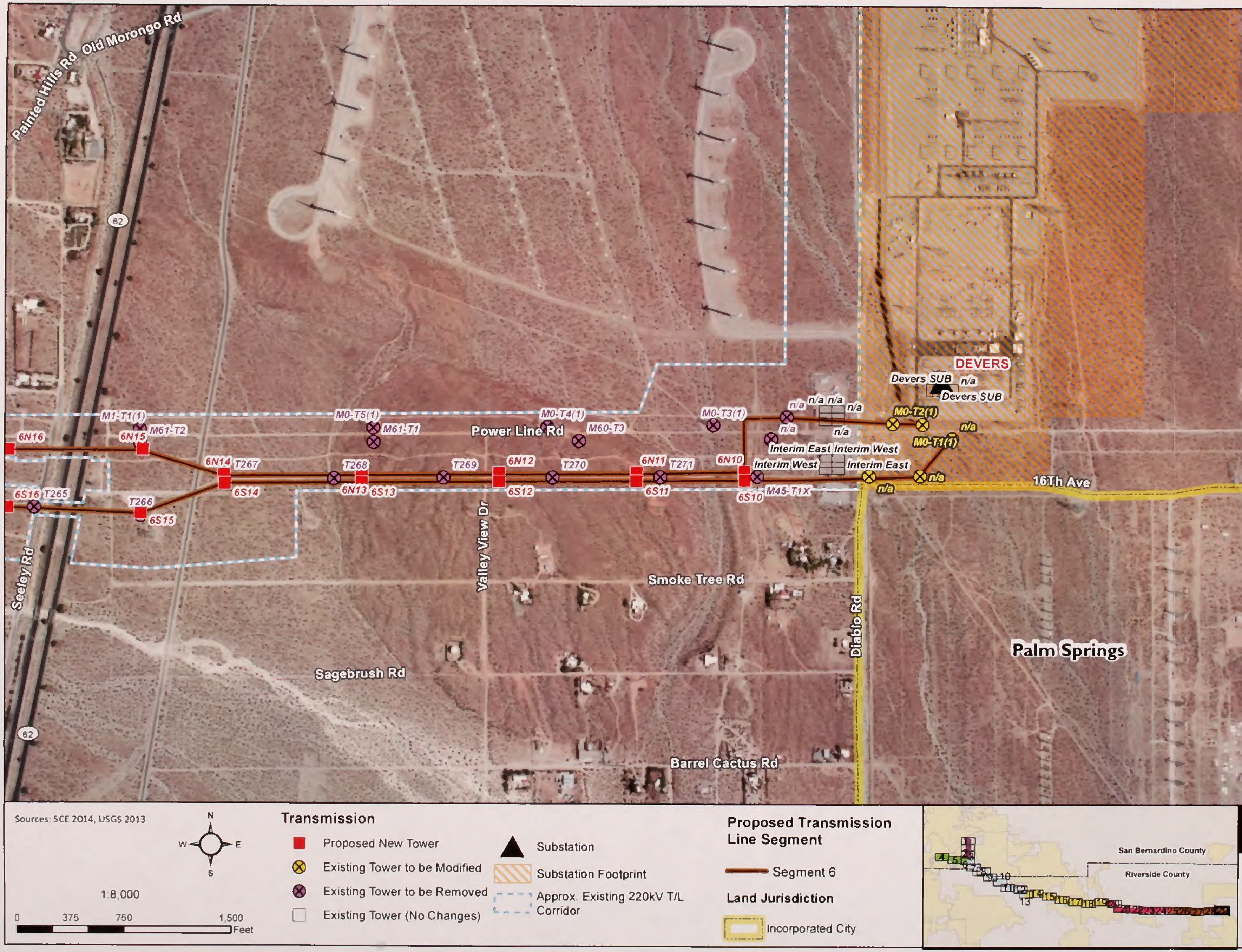

West of Devers Upgrade Project

AP.2-29

Detailed Maps

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Appendix 3. SCE-Morongo ROW Agreement

Appendix 3

SCE-Morongo ROW Agreement

Appendix J of SCE’s Application A.13-10-020

PUBLIC UTILITIES COMMISSION
STATE OF CALIFORNIA

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Appendix J

WEST OF DEVERS UPGRADE

ROW AGREEMENT

AGREEMENT RELATED TO GRANT EASEMENTS AND RIGHTS-OF -WAY FOR ELECTRIC TRANSMISSION LINES AND APPURTENANT FIBER-OPTIC TELECOMMUNICATIONS LINES AND ACCESS ROADS ON AND ACROSS LANDS OF THE MORONGO INDIAN RESERVATION

Recitals

WHEREAS, Southern California Edison Company, a California corporation and successor-in-interest to California Electric Power Company ("**SCE**"), is the owner and operator of the Devers-San Bernardino No. 1 220kV electric transmission line; the Devers-Vista No. 1 220kV electric transmission line; the Devers-Vista No. 2 220kV electric transmission line; the Devers-El Casco 220 kV electric transmission line; the Banning-Bottle-Maraschino and the Bottle-Garnet-Windfarm 115 kV electric transmission line circuits; and the Devers-Banning-Wind Park and the Banning-Zanja 115 kV electric transmission line circuits; and fiber-optic telecommunications lines utilizing the same support structures as, respectively, the Devers-Vista No. 1 transmission line and the Banning-Bottle-Maraschino and the Bottle-Garnet-Windfarm 115 kV electric transmission line circuits; together with certain appurtenant facilities, including but not limited to towers, poles, guy wires and ground wires, and has the right to maintain and utilize access roads (collectively, the "**Existing Facilities**"), all crossing portions of the reservation trust lands (the "**Reservation**") of the Morongo Band of Mission Indians, a federally recognized Indian tribe (the "**Morongo Band**" or "**Tribe**");

WHEREAS, SCE has a need for additional 220kV transmission capacity in order to receive output from generation sources east of SCE's Devers substation, including, without limitation, renewable generation sources, and for that purpose plans to upgrade and reconfigure its 220kV Existing Facilities west of the Devers substation through replacement of conductors and support structures, fiber-optic telecommunication lines, and appurtenant facilities (the "**Future Facilities**") west of SCE's Devers substation;

WHEREAS, SCE formerly operated the Devers-San Bernardino No. 1 220kV electric transmission line, the Devers-Vista No. 1 220kV electric transmission line, the Banning-BottleMaraschino and Bottle-Garnet-Windfarm 115 kV and the Devers-Banning- Wind Park 115 kV electric transmission line circuits, as well as a fiber-optic telecommunications line on the same support structures as the Devers-Vista No. 1 220 kV transmission line, on rights of way/easements across the lands of the Reservation that have expired, and now operates those Existing Facilities pursuant to temporary use permits issued by the Morongo Band;

WHEREAS, SCE desires to secure the right to continue operating, maintaining, inspecting and accessing all of its Existing Facilities currently on and across Reservation;

and to secure such rights, including rights for construction of the Future Facilities to be located in a modified corridor across the lands of the Reservation;

WHEREAS, SCE operates the part of the Devers-Banning- Wind Park 115 kV electric transmission line circuits located on tribal trust lands northwest of the City of Banning in an easement/right-of-way that expires in 2017, and the Devers-Vista No. 2 220kV electric transmission line and what now is known as the Devers-El Casco 220kV electric transmission line in an easement/right of way that was granted by the federal government and expires in 2019;

WHEREAS, The Morongo Band and SCE desire to replace all existing grants, licenses and approvals relating to the Existing Facilities, including easements that have not yet expired, with four new easements in corridors across the trust lands of the Reservation into which all of the Existing Facilities and the Future Facilities will be consolidated, subject to the terms and conditions of this Agreement;

WHEREAS, The Morongo Band is willing to enter into this Agreement and consent to the Grant of Easements and Rights-of-Way approved by the Secretary of the Interior or his designated representative ("**United States**") for the four new easements to SCE (collectively, the "**Federal Grant**") in return for appropriate compensation for the continued use of the Reservation lands for the Existing Facilities and the Future Facilities as those facilities, operated at voltages no greater than 230 kV, may be maintained, replaced, reconductored, relocated, reconstructed and/or reconfigured;

WHEREAS, The Tribe and SCE have agreed that it is in the best interests of both the Tribe and SCE for the United States to grant, pursuant to 25 U.S.C. Section 323, and its implementing regulations at 25 C.F.R. Part 169, to SCE easements and rights-of-way allowing SCE's continued use, operation, maintenance, inspection, upgrade and access of (a) the Banning-Bottle-Maraschino 115 kV and the Bottle-Garnet-Windfarm 115 kV electric transmission line circuits in its present corridor ("**Right-of-Way 1**"), (b) the Devers-Banning- Wind Park and the Banning-Zanja 115kV electric transmission line circuits ("**Right-of-Way 2**"), (c) its remaining Existing Facilities in their present locations pending reconstruction, replacement, reconfiguration, operation, inspection, access, maintenance and relocation of SCE's Future Facilities in a new or modified corridor ("**Right-of-Way 3**"; collectively, with Right-of-Way 1 and Right-of-Way 2, the "**Existing Facilities Rights-of-Way**"), and (d) a corridor for SCE's future construction, use, operation, maintenance, inspection, upgrade and access of Future Facilities, which shall include either two double-circuit 220kV transmission lines or four single-circuit 220kV transmission lines where engineering constraints require single-circuit lines, to take the place of those Existing Facilities currently on Right-of-Way 3 in the new or modified corridor ("**Right-of-Way 4**"; collectively with the Existing Facilities Rights-of-Way, the "**Rights-of-Way**");

WHEREAS, The final engineering and licensing of the Future Facilities and the final placement of the Future Facilities within Right-of-Way 4 have not yet been completed;

WHEREAS, The parties desire to enter into this binding Agreement in order to document the terms and conditions on which the Morongo Band will consent to the United States' approval and granting to SCE Easements and Rights-of-Way for the Existing Facilities and the Future Facilities;

WHEREAS, SCE has made an extra payment of $1,054,375.00 to the Morongo Band under a prior tribal license, now expired, which extra payment shall be retained by the Morongo Band to defray the costs incurred by the Morongo Band in connection with this Agreement and SCE's application for the Federal Grant in accordance with Section III below; and

WHEREAS, the Morongo Band's consent to the Federal Grant is contingent upon SCE's agreement to enter into, with an entity in which the Morongo Band owns an interest, a binding and enforceable Development and Coordination Agreement (the "**DCA**") giving to said entity an option to participate in the financing of the upgrade and relocation of the Future Facilities through the leasing of transmission transfer capability on those facilities subject to the receipt of the necessary regulatory approvals.

NOW, THEREFORE, in consideration of the foregoing and the mutual promises contained herein, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Morongo Band and SCE hereby enter into this "Agreement Related to the Grant of Easements and Rights-Of-Way For Electric Transmission Lines and Appurtenant Fiber-Optic Telecommunications Lines On and Across Lands of the Morongo Indian Reservation" (this "**Agreement**") for the Rights-of-Way encumbering the Reservation for the Existing Facilities and the Future Facilities on the following terms and conditions:

I. Rights Conferred by and Terms and Conditions of Federal Grant.

A. Execution of the Federal Grant; Final Engineering.

The Rights-of-Way are described as follows: Right-of-Way 1 is a strip of land covering approximately twenty-six (26) acres, as described in **Exhibit** "A" and depicted on **Exhibit** "B". Right-of-Way 2 is a strip of land covering approximately forty (40) acres, as described in **Exhibit** "A" and depicted on **Exhibit** "B". Right-of-Way 3 is a strip of land covering approximately three hundred forty (340) acres described in **Exhibit** "A" and depicted on **Exhibit** "B". Right-of-Way 4 is that corridor described in **Exhibit** "A" and depicted on **Exhibit** "B". Upon completion of final engineering and SCE's obtaining of required approvals from the California Public Utilities Commission ("**CPUC**") and other relevant governmental authorities, Right-of-Way 4 shall be amended to conform to said engineering and approvals. SCE shall submit final maps of definite location for the facilities to be placed in Right-of-Way 4 upon completion of construction.

The Morongo Band shall execute its consent to SCE's application for the Federal Grant (such form of Grant is attached hereto as **Exhibit "C"**) and shall deliver such original consent to SCE within five (5) days of the Effective Date (as defined below) of this Agreement.

SCE shall present to the Morongo Band the final engineering and licensing approvals for the Future Facilities once such final engineering is complete and the licensing approvals for the Future Facilities from all required governmental entities have been granted. The parties agree that Right-of-Way 4 initially shall be no more than 800 feet wide, and if, after construction of the New Facilities within Right-of-Way 4, a narrower right-of-way satisfies SCE's reasonable requirements, the width of Right-of-Way 4 shall be reduced where and to the extent that SCE's reasonable requirements are met. The Tribe shall, within thirty (30) days of such notification, execute a consent for inclusion in SCE's application for an amendment of the Federal Grant in order to modify Right-of-Way 4's legal description.

B. Additional Terms and Conditions Regarding Use.

Consistent with the terms of the Federal Grant, SCE shall have the right to construct roads, use existing roads and make such additions thereto, on lands of the Tribe within the Rights-of-Way, as shall be reasonably necessary or convenient to SCE's access to and use of the Rights-of-Way, or any extension of the Rights-of-Way on the lands of others, and the right to use all reasonably necessary and convenient means of ingress to and egress from the Rights-of-Way, or said extension thereof, from the public highway or tribally-maintained or controlled roads most convenient thereto, for the uses and purposes and the exercising of the Federal Grant. SCE shall also have the right to establish and utilize within Rights-of-Way such temporary marshalling and material staging yards, as SCE reasonably determines to be necessary for construction activities related to SCE's use, operation, and maintenance of the Rights-of-Way, *provided* that all such SCE facilities shall be developed and maintained in a manner that will, to the extent feasible and practicable, prevent erosion and alteration of existing land forms and naturally-occurring vegetation, to the extent consistent with SCE's need to manage vegetation within its transmission corridors. SCE shall work with appropriate Morongo Tribal staff to establish the access roads and construction staging areas on lands of the Tribe outside of the Rights-of-Way. If the Tribe believes that SCE's activities have caused damage or accelerated wear and tear to tribal roads, the Tribe and SCE shall consult, and SCE agrees to take reasonable actions to repair such roads.

SCE shall implement CPUC policies and design guidelines for power-frequency electric and magnetic fields (**"EMF"**) for the design, construction, and operation of the Future Facilities on the Morongo Reservation to minimize any adverse impacts on the Reservation's environment and/or persons or property within the Reservation's boundaries. SCE will provide a copy of any EMF Field Management Plan applicable to the Existing and/or Future Facilities to the Tribe for its review and comment, prior to submittal by SCE to the CPUC or any other applicable regulatory agency.

SCE shall consult with the Tribe concerning the design of any new or replacement transmission line towers and the potential relocation/modification of the 115kV subtransmission line located on Right-of-Way 2 (the **"Right-of-Way 2 Subtransmission Line"**), and shall defer to the Tribe's choice of 220/230 kV and 115 kV tower design(s) and its desired relocation or modification of the Right-of-Way 2 Subtransmission Line if the (i) tower design and line relocation and/or modification meets SCE's engineering standards and criteria, (ii) tower design and line relocation and/or modification meets all applicable regulatory requirements, (iii) use of the tower design and/or the line relocation and/or modification would not cause a delay in the licensing and construction of the Future Facilities, and (iv) the total actual increased project costs thereof, including all costs related to the Tribe-requested changes in tower design and the potential relocation and/or modification of the Right-of-Way 2 Subtransmission Line would not collectively exceed thirty million dollars ($30,000,000.00). If the parties agree to the relocation of the Right-of-Way 2 Subtransmission Line in accordance with this Section, the Tribe shall consent to a grant from the United States for a replacement easement, containing all the same terms and conditions as the easement for Right-of-Way 2, for the new location prior to SCE's relocation of such facilities. If the parties agree to the modification of the Right-of-Way 2 Subtransmission Line in accordance with this Section, the Tribe shall consent to the amendment of the grant of easement for Right-of-Way 2, if deemed necessary in SCE's opinion, to grant SCE additional land rights for such modification. SCE shall not be obligated to remove, relocate or otherwise modify the Right-of-Way 2 Subtransmission Line prior to the Tribe consenting to and/or the United States granting such rights.

SCE hereby agrees that upon relocation and energization of each of SCE's Existing Facilities to a different corridor or corridors on the Reservation, SCE shall remove each such Existing Facility, restore the land previously occupied by such Existing Facility to its natural state to the extent feasible, including as appropriate revegetation with native plants, and quitclaim to the United States of America for the benefit of the beneficial owner of the trust lands formerly occupied by each such Existing Facility all of SCE's right, title and interest in said trust lands, and to convey to the fee owner all of SCE's right, title and interest to easements on non-trust lands within the boundaries of the Reservation that no longer are occupied by any of SCE's Existing Facilities and that are no longer used and useful to SCE.

It is further understood and agreed that upon request by the Tribe to acquire SCE's distribution system on the Reservation ("**Distribution System Acquisition**"), SCE and the Tribe shall negotiate in good faith an agreement setting forth the terms and conditions relating to such conveyance, based upon the principles that fair market value, determined through independent appraisal, which appraisal costs shall be shared equally, shall be paid for the distribution system on the Reservation, and that any and all costs that SCE determines are necessary to separate the distribution system to be conveyed from the remainder of SCE's distribution system will be paid by the Tribe. The conveyance will be subject to all necessary regulatory approvals and will also be subject to the Tribe's compliance with any non-discriminatory technical and other standards and wheeling charges that would be applicable to any other government-owned electric utility. In the alternative, should the Tribe so request, consistent with California law and CPUC regulations, SCE shall assist the Tribe in establishing a program of Community Choice Aggregation within the boundaries of the Reservation.

C. Commitments by Tribe.

The Tribe agrees to timely issue temporary entry permits (each, a "**TEP**") to allow SCE to use tribal lands near and adjoining the Rights-of-Way for temporary use yards (each, a

"**Temporary Use Yard**") for uses including, but not limited to, temporary marshalling, material and equipment staging and storage, helicopter landing and staging, construction crane pads, and construction pulling and stringing locations in order to facilitate construction and maintenance activities within the Rights-of-Way, and agrees that SCE will not be charged more than $2,500.00 for each Temporary Use Yard's TEP. In accordance with the Federal Grant, SCE is not required to seek a TEP for its use of access roads for ingress and egress necessary for SCE's access to the Rights-of-Way, but shall consult with appropriate tribal staff to establish appropriate locations for new access roads that SCE may need to construct on tribal lands outside of the Rights-of-Way. The Tribe agrees that the Tribe and its assigns and permittees shall not deposit or permit or allow to be deposited, earth, rubbish, debris or any other substance or material, whether combustible or noncombustible, on the Rights-of-Way, or so near thereto as to constitute, in the reasonable opinion of SCE or successors, assigns or agents, a menace or danger to said electric lines and communication circuits or which may in the opinion of SCE, interfere with SCE's ready access to, operation or maintenance of said electric lines and communication circuits.

The Tribe agrees that the reservation of rights for itself and its assigns and permittees, rights across (but not longitudinally along) the Rights-of-Way, for (1) underground water pipelines, (2) farm, grazing or pasture fences, and (3) roads, shall not interfere with or endanger, in the opinion of SCE, the operation or maintenance of the electric lines and communication circuits of SCE, or SCE's ready access to its said electric lines and communication circuits, or the exercise of any of the rights herein granted to SCE. In addition to said reserved rights for water pipelines, farm fences and roads, the Tribe and its assigns and permittees shall have only the additional right to cultivate the land within the Rights-of-Way for any and all field or orchard crops which may be grown thereon or to use such land for grazing and pasturage, provided such uses shall not interfere with the rights herein granted to SCE, its successors and assigns, and to use said lands for any other purpose that is not inconsistent with applicable laws and regulations or SCE's right to access, maintain and safely operate its Existing and/or Future Facilities. Further, the Tribe agrees that SCE, its successors, assigns and agents, shall not be liable for damage to, or removal of trees and vegetation, including loss of production, both present and future, where such damage, removal and loss occurs as a result of the exercise of the rights granted in the Federal Grant.

The Tribe agrees that the Rights-of-Way shall not be used for the interment of human remains.

The Tribe shall not conduct or permit any activities on lands overlying underground Existing and/or Future Facilities that would interfere with the safe access to or maintenance and operation of such facilities.

The Tribe and its assigns and permittees, in prospecting for or developing oil, gas, petroleum or other mineral or hydrocarbon substances, will not do so within the Rights-of-Way or in such a manner as will endanger or interfere with the structures and facilities erected and installed by SCE or with the operation or maintenance of the electric lines and communication circuits of SCE, and will not, without SCE's express written consent, which consent shall not unreasonably be withheld as long as no interference with or endangerment to SCE's facilities would result therefrom, construct, place or maintain, or permit to be constructed, placed or maintained, any oil or mud sump, derrick, drilling rig, oil storage tank or other structure of any kind whatsoever, on any portion of the Rights-of-Way.

The Tribe shall not grant any other easement on, under or over the Rights-of-Way to any person, firm or corporation without the previous written consent of SCE, which consent shall not be unreasonably withheld as long as the proposed easement would not interfere with SCE's exercise of its rights under the Federal Grant. The Tribe shall not consent to any grant by the United States of any easement and right of way on, under or over the Rights-of-Way to any person, firm or corporation without the previous written consent of SCE, which consent shall not be unreasonably withheld as long as the proposed easement would not interfere with SCE's exercise of its rights under the Federal Grant.

Notwithstanding any SCE or CPUC general regulations or policies to the contrary, the Tribe expressly reserves to itself the right to construct, operate, maintain and staff guard kiosks within the Rights-of-Way granted to SCE by the Federal Grant, subject to the Tribe's compliance with SCE's standards and criteria regarding such kiosks; *provided*, that the Tribe agrees that such construction, operation, maintenance and staffing of guard kiosks will not interfere with the safe access to and safe maintenance and operation of SCE's Existing and/or Future Facilities.

If (a) the Federal Grant has not been executed by the United States, (b) the United States modifies or conditions material terms of the Federal Grant such that the Federal Grant is unacceptable to SCE, or (c) a court of competent jurisdiction voids the Federal Grant, the Tribe agrees, upon written request from SCE, to grant SCE a tribal right-of-way for SCE's Existing Facilities and Future Facilities upon terms consistent with the terms and conditions of this Agreement and the Federal Grant.

II. Term of Agreement.

The term ("**Term**") of this Agreement shall commence on the Effective Date (as defined in Section VI.M below) and shall terminate on the later of the termination of the Federal Grant or fifty (50) years after the Effective Date of this Agreement, unless (a) earlier terminated (i) by either party pursuant to Section V.C.b below, (ii) by the Tribe pursuant to Section V.D below, (iii) by SCE pursuant to Section V.E below, or (iv) by written agreement of the parties, or (b) the parties agree in writing to renew or extend this Agreement. The term of any existing grants, licenses, approvals and/or permits for the Existing Facilities on the Existing Rights-of-Way shall terminate upon the effective date of the Federal Grant.

III. Fees.

SCE has paid an application fee of $150,000 to the Tribe with regard to this Agreement and the Federal Grant, to be deducted from and credited against the extra payment of $1,054,375.00 made by SCE to the Tribe in May 2008. The remainder of said extra payment amounting to $904,375.00 shall be retained by the Tribe, and the parties agree that such amount will cover any and all costs incurred by the Tribe to process this Agreement, obtain the Federal Grant and monitor SCE's construction of the Future Facilities.

As full monetary consideration both for the Tribe's agreement to consent to the Federal Grant under this Agreement and the United States' grant of the Federal Grant, inclusive of all rentals, fees, real property or personal taxes, special assessments, and other property assessments arising out of SCE' s past, present or future use of Tribal lands for the Existing Facilities and the Future Facilities granted hereunder and in the Federal Grant, SCE shall pay to the Tribe an annual fee (the "**Annual Fee**") of six million five-hundred thousand Dollars U.S. ($6,500,000.00) per year during the first five years of the Term, such amount to be prorated for any partial calendar year to which payments may be applied. Thereafter, the Annual Fee shall be increased by $500,000 every five years, beginning in the sixth year after the Effective Date.

Said payments shall be made either at the main office of the Morongo Band of Mission Indians, located at 12700 Pumarra Road, Banning, CA 92220, or by electronic fund transfer to an account designated by the Tribe, no later than 5:00 p.m. on the Effective Date, and on the first day of the first month of each subsequent calendar year during the Term; provided, however, that, notwithstanding the foregoing, the initial payment under this Agreement shall not be due until the next business day following the execution date of the Effective Date Certificate (as defined in Article VI.M below). Such initial payment hereunder shall cover the period commencing on the first day of the month in which the Effective Date occurs, and shall be in addition to any monthly use permit fee that SCE may have paid the Tribe for the month in which the Effective Date occurs. All payments made by SCE to the Tribe shall be non-refundable, except as such payments may be pro-rated in accordance with the terms of the Grant and this Agreement.

IV. Dispute Resolution; Limited Waiver of Sovereign Immunity.

Any disputes between the parties arising under this Agreement, the Federal Grant, or applicable law, including those involving the respective rights of the Tribe and/or SCE hereunder or under the Federal Grant and/or the performance or non-performance of any obligation by either the Tribe or SCE shall first be subject to informal efforts at resolution through meeting and conferring confidentially and in good faith within 20 days of a written request therefor by the aggrieved party. At the request of either party, the meet and confer shall be facilitated by a mediator chosen from a list of candidates supplied by JAMS (Judicial Arbitration & Mediation Services), and either party may request the mediator to suggest a resolution that shall not be binding on either party. The costs and expenses of such mediation shall be borne by SCE if the mediation results in a resolution of the dispute in a manner favoring the Tribe's position, as determined by the mediator, but shall be borne equally by both SCE and the Tribe if the mediation results in a resolution of the dispute in a manner favoring SCE's position or in a manner that favors neither party's position, also as determined by the mediator. If the foregoing informal procedures are unsuccessful in resolving the dispute, either party may bring suit in the United States District Court for the Central District of California, the jurisdiction and venue of which the parties hereby consent to, or in the event such federal district court disclaims jurisdiction, then any other federal district court of competent jurisdiction, and appropriate federal appellate courts, for declaratory and/or injunctive relief limited to declaring the respective rights of the parties under this Agreement and, if necessary to enforce the court's order, issuing such further orders as are necessary to specifically enforce those rights during the Term.

If for any reason such United States district courts do not have or decline jurisdiction over the subject matter of the action, SCE's suit as authorized herein shall be resolved by a

California state court of competent jurisdiction in the County of Riverside, California, the jurisdiction and venue to which the parties expressly consent. In the case of a suit brought in California state court, the entire dispute shall be submitted for resolution by a referee appointed pursuant to California Code of Civil Procedure section 638, the fees of whom shall be paid in the same manner as provided above with respect to the fees of the mediator. The remedies SCE may seek from the referee shall be limited to those provided for above with respect to a suit brought in a federal court. Any appeal from the referee's decision in a state court proceeding shall be brought in the appropriate court of appeals having jurisdiction to review the referee's decision.

The parties consent that any process or notice in connection with the initiation of litigation may be served by certified mail, return receipt requested, or by personal service, or in such other manner as may be permissible under the rules of the applicable court, provided a reasonable time for appearance is allowed.

SCE shall have no right to seek or obtain any relief extending beyond the expiration of the Term, or any award of money damages against or other payment of money by the Tribe, except as provided in this section and Section V.F below. Notwithstanding the foregoing, SCE shall have the right to seek an award of money damages against or other payment of money by the Tribe solely to obtain payment due from the Tribe in connection with the Distribution System Acquisition. Except as otherwise expressly provided herein, the Tribe expressly waives any right it may possess to require SCE to exhaust any and all tribal remedies prior to bringing an action in court, provided that SCE has first met and conferred in good faith with the Tribe to attempt an informal resolution of any dispute arising under this Agreement or the Federal Grant as provided above. The Morongo Band hereby waives its sovereign immunity only to the extent necessary to grant SCE the relief allowed under this Article IV, and in particular for the limited purpose of allowing SCE to sue in the appropriate court of competent jurisdiction, with all rights of appeal to the appropriate appellate courts, to obtain an injunction or other appropriate enforcement order (but not monetary damages (except for those allowed pursuant to the paragraph above)) against the Morongo Band for any attempted interference with SCE's rights under this Agreement, the Federal Grant or under applicable law. The Tribe further waives any right to bring an action in tribal court or before tribal administrative agencies.

V. Events of Default; Limitation on Damages, Remedies and Termination Rights.

A. Events of Default. The occurrence of any one of the following shall constitute an "**Event of Default**" under this Agreement:

(a) SCE shall fail to make payments for amounts due under this Agreement or the Federal Grant within thirty (30) days after notice that such payment is past due;

(b) A party shall fail to comply with any other material provision of this Agreement or the Federal Grant (other than failures covered by subparagraph (a) above), and any such failure shall continue uncured for thirty days after notice thereof, provided that if such failure is not capable of being cured within such period of thirty (30) days with the exercise of reasonable diligence, then such cure period shall be extended for an additional reasonable period of time so long as the defaulting party is exercising commercially reasonable efforts to cure such failure;

(c) Any representation made by a party hereunder shall fail to be true in any material respect at the time such representation is given and such failure shall not be cured within thirty days after notice thereof by a non-defaulting party; and

(d) SCE shall fail to execute and comply with any material provision of the DCA or the Transfer Capability Lease by and between SCE and Morongo Transmission LLC (the "Lease") (if the option to enter into the Lease is timely exercised), and any such failure shall continue uncured for thirty days after notice thereof, provided that if such failure is not capable of being cured within such period of thirty days with the exercise of reasonable diligence, then such cure period shall be extended for an additional reasonable period of time, (but not exceeding ninety (90) days), so long as SCE is exercising commercially reasonable efforts to cure such failure.

B. Limitation on Damages. No party shall be liable to the other party under this Agreement for consequential, incidental, punitive, exemplary or indirect damages or other business interruption damages, by statute, in tort or contract, under any indemnity provision or otherwise. The provisions of this Section V.B. shall not be construed to relieve any insurer of its obligation to pay any insurance proceeds in accordance with the terms and conditions of valid and enforceable insurance policies. Nothing contained in this Agreement, the Federal Grant, or any other document or agreement related hereto shall be construed to waive, limit or restrict, in any way, any of the Tribe's or SCE's rights, remedies or defenses under or emanating from the DCA or the Lease.

C. Remedies. Subject to Article IV (Dispute Resolution), if an Event of Default occurs and is continuing, the non-defaulting party shall have the right (a) to pursue all remedies available at law or in equity, including without limitation, the right to institute an action, suit or proceeding in equity for specific performance of the obligations under this Agreement, and/or (b) to terminate this Agreement and seek the termination of the Federal Grant upon two year's notice to the defaulting party.

D. Additional Morongo Termination Right. In addition to the right contained in Section V.C above, the Morongo Band shall have a one-time right to terminate this Agreement and seek the termination of the Federal Grant upon two years' notice if as of January 1, 2017: (a) SCE has not received all the "Required SCE Regulatory Approvals" (as defined in the DCA), or (b) Morongo Transmission LLC has submitted and pursued with diligence applications for "Required Investor Regulatory Approvals" (as defined in the DCA) but has not received all such approvals. Should this Agreement and the easements be terminated in accordance with this Section V.D and the effective termination date is not on the first day of the calendar year, SCE shall only be obligated to pay to the Morongo Band an apportioned amount of the Annual Fee due that partial year, allocated on a pro-rata basis.

E. Additional SCE Termination Right. In addition to the right contained in Section C above, SCE shall have the right to terminate this Agreement upon notice to the Tribe if (a) (i) the Federal Grant has not been executed by the United States by May 27, 2014, (ii) the United States modifies or conditions material terms of the Federal Grant such that the Federal Grant is unacceptable to SCE, or (iii) a court of competent jurisdiction voids the Federal Grant and (b) SCE has removed its facilities from the Morongo Band's lands and restored those lands to as close to their original condition as is reasonably feasible.

F. **Refund to SCE.** If the Federal Grant has been terminated prior to its expiration for a reason other than SCE's uncured material breach of the terms and conditions of either the Federal Grant or this Agreement and SCE has removed its facilities from the Morongo Band's lands and restored those lands to as close to their original condition as is reasonably feasible, the Morongo Band shall refund to SCE the proportion of the pre-paid Annual Fee, allocated on a pro-rata basis, for the portion of the calendar year remaining after the final removal of the facilities and completion of the restoration of the Tribe's lands, no later than five (5) business days following the completion of such removal and restoration.

VI. Additional Covenants and Agreements of the Parties.

A. **No Severance or Other Taxes.** The Morongo Band expressly covenants and agrees that **(i)** the consideration set forth above is in lieu of and in satisfaction of any taxes, licensing fees, or other fees, or impositions of any sort by the Morongo Band or any other Tribal agency, and **(ii)** the Morongo Band shall not impose any right-of-way tax or other taxes, licensing or registration fees, or other fees or impositions of any sort, upon SCE's interest in the Rights-of-Way or any of the operations conducted by SCE on the Rights-of-Way during the Term; *provided,* that solely in the event that either or both the State of California or County of Riverside were to repeal or disclaim the right to collect possessory interest taxes assessed on SCE's facilities located on tribal trust lands within the boundaries of the Reservation, then SCE, during the Term, shall pay an amount equal to the revoked taxes as an additional payment to the Morongo Band in lieu of possessory interest tax(es), solely to the extent that such tax(es) were applicable to the Existing and/or Future Facilities located on tribal trust lands of the Morongo Band within the Reservation immediately preceding repeal or disclaimer of jurisdiction by the State of California or the County of Riverside. If a valid tax, licensing fee or other fee or imposition of any sort other than in lieu of an equivalent State or County tax is imposed by the Morongo Band contrary to the covenant made in this section, the Morongo Band and SCE agree that, notwithstanding any other provision of this Agreement, the full amount of such tax, licensing fee or other fee or imposition shall reduce by an equal amount the amounts which are due to be paid annually to the Morongo Band by SCE under this Agreement, so that the total amounts payable as taxes, licensing fees or other Tribal fees or impositions shall not exceed the amount which would otherwise be paid as compensation under this Agreement.

B. **Tribal Ordinances; Jurisdiction.** The Morongo Band hereby waives its rights to invoke the Morongo Land Use Ordinance No. 2, passed June 24, 1978; Morongo Band of Mission Indians Ordinance # 31, Utility Transmission Ordinance, dated August 5, 2006; and any other Tribal ordinance, resolution, or law to revoke or otherwise interfere with SCE's rights under this Agreement or the Federal Grant, including without limitation the right to impose additional taxes or fees. Except for the in-lieu of tax payments set forth in Section VI.A above, or as otherwise expressly provided in this Agreement, the Rights-of-Way, Existing Facilities and Future Facilities shall be subject to the exclusive regulatory jurisdiction of the CPUC and/or the Federal Energy Regulatory Commission and shall not be subject to regulatory authority of the Tribe.

C. **Interconnection of Reservation Generating Facilities.** In the event that the Morongo Band desires to construct or authorize the construction of electrical generating facilities on the Reservation, SCE will perform the required interconnection studies and provide interconnection services in accordance with the Generator Interconnection Procedures ("GIP") under the then-applicable SCE Wholesale Distribution Access Tariff or California Independent System Operator Tariff, whichever is applicable. To the extent that a generating facility proposed by the Tribe meets the GIP criteria to be studied under the GIS defined Fast Track or Independent Study Process, such expedited processes will be applicable to the proposed generating facility.

D. **Waiver of Claims.** SCE and the Tribe hereby mutually release and waive any and all claims for, or defenses to, injuries, damages, or other legal or equitable relief, if any such claims exist, arising from events occurring on or before the Effective Date with regard to the Rights-of-Way and the matters covered under this Agreement and the Federal Grant, including without limitation all existing grants, licenses, permits and approvals relating to the Existing Facilities. SCE and the Tribe agree that it is their intent to resolve all outstanding claims, known and unknown, between the parties in their negotiations concerning the future status of said electric transmission lines and appurtenant facilities.

E. **Council Approval.** If the Morongo Band's General Membership has delegated to the Morongo Tribal Council the authority to approve and bind the Morongo Band to this Agreement, this Agreement shall be approved by the Morongo Tribal Council. Otherwise, this Agreement shall be approved by a majority vote of the Morongo Band's General Membership. Such delegation or approval of the General Membership shall, in either case, include the right of the Morongo Tribal Council to consent, on behalf of the Tribe, to the Federal Grant and to enter into the agreements contemplated in this Agreement.

F. **Entire Agreement.** This Agreement, including the exhibits attached hereto, contains the entire agreement and consideration between the parties with respect to this matter and supersedes all prior oral or written agreements, licenses, permits, commitments or understandings with respect to the Rights-of-Way, the Existing Facilities and the Future Facilities.

G. **Binding Effect.** This Agreement shall be binding upon and inure to the benefit of the respective parties, and their successors and assigns, heirs and personal representatives.

H. **Severability.** Should a court of competent jurisdiction finally determine or declare any term, condition, covenant or provision of this Agreement to be null, void or of no legal force, effect or consequence, in whole or in part, by final judgment or decree, such decree or judgment shall not vitiate, defeat or impair the enforceability of any remaining terms, conditions, covenants or provisions not so held, which shall remain in full force and effect.

I. **Construction.** In all cases, the language in all parts of this Agreement shall be construed simply according to its fair meaning and not strictly for or against any party.

J. **Survival.** The terms and conditions contained in Article IV and V herein shall survive any termination of this Agreement.

K. **Governing Law.** This Agreement shall be governed by the laws of the United States of America, and where such laws are nonexistent or inapplicable, the laws of the State of California.

L. **Multiple Counterparts**. This Agreement may be executed in one or more counterparts, each of which shall be deemed to be an original, but all of which together shall be considered one and the same instrument.

M. **Effective Date: Approvals**. This Agreement shall become effective upon the last to occur of **(i)** the execution of this Agreement by the Chairman of the Morongo Band, as authorized by Resolution No. 112012-02 of the Morongo Tribal Council, and SCE, as authorized by Resolution dated June 21, 2012; **(ii)** the ratification by the general membership of the Morongo Band; and **(iii)** any and all necessary approvals of the United States Department of the Interior, Bureau of Indian Affairs and any other government agency(ies) whose approval is a condition precedent to the validity, performance and enforceability of this Agreement, to the extent required under applicable law. All such approvals must be final for the applicable person or entity. Furthermore, the effectiveness of this Agreement shall be contingent upon SCE's entering into the DCA with Morongo Transmission LLC attached hereto as **Exhibit "D"**. Upon completion of the foregoing executions and final approvals, the parties hereto shall certify the date of the Effective Date in a writing signed by both parties (the "**Effective Date Certificate**").

IN WITNESS WHEREOF, the Morongo Band of Mission Indians and the Southern California Edison Company have executed this Agreement this 27 day of November, 2012.

SOUTHERN CALIFORNIA EDISON COMPANY

By: ______________________

MORONGO BAND OF MISSION INDIANS

By: ______________________

UNITED STATES

DEPARTMENT OF THE INTERIOR

BUREAU OF INDIAN AFFAIRS

APPROVAL OF AGREEMENT

The within Agreement between Southern California Edison Company and the Morongo Band of Mission Indians consisting of pages 1 through 14 and Exhibits "A" through "D" is hereby approved on behalf of the Secretary of the Interior pursuant to the provisions of 25 U.S.C. § 81 and its implementing regulations at 25 C.F.R. Part 84.

Dated: _______________, 201_

By: ___________________________

____________________, Superintendent

United States Department of the Interior

Bureau of Indian Affairs

WEST OF DEVERS UPGRADE

ROW AGREEMENT EXHIBITS

EXHIBIT A

See attached

EXHIBIT A

Right-of-Way 1 (Shown on Exhibit B as the Banning-Bottle-Maraschino and the Bottle–Garnet-Windfarm 115kV electric transmission line circuits)

The first segment of the existing 115kV Transmission Line (South) commences at the SW corner of Section 12, Township 3 South, Range 1 East SBM. Thence proceeds in a Northeasterly direction for approximately 2,200 Feet to a point. Thence proceeding in a Southeasterly direction for approximately 3,000 Feet to the SE corner of said Section 12 also known as the Point of Termination.

The second segment of the existing 115kv Transmission Line (South) commences at point on the West line of Section 14, Township 3 South, Range 2 East SBM, about .5 miles from the North section line of said Section 14. Thence said line continues in a due east direction approximately 0.25 miles, which includes a spur line that goes about 450 feet north in the western half of Section 14 into the Bottle Substation. Thence, said main line continues in a northeasterly direction for about 4,550 Ft to the NE corner of Section 14, Township 3 South, Range 2 East SBM also known as the Point of Termination.

The third segment of the existing 115kv Transmission Line (South) commences near the SW corner of Section 12, Township 3 South, Range 2 East SBM for about 1.0 miles to a point on the East line Section 12 about .50 miles from the North line of said Section 12, also known as the Point of Termination.

Subject to a land survey, the total distance of Right of Way 1 (existing 115kv Transmission Line (South)) is approximately 3.75 miles, with a width of 50 feet and covering an area of approximately 26 acres.

Subject to a land survey, the lands of the Morongo Indian Reservation occupied by Right of Way 1 are within the following named sections, townships, and ranges:

State of California
San Bernardino Base and Meridian
Section 12, T. 3 S., R. 1 E.
Sections 12 and 14, T. 3 S., R. 2 E.

Right-of-Way 2 (Shown on Exhibit B as the Devers-Banning-Wind Park and the Banning-Zanja 115kV electric transmission line circuits)

The first segment of the existing 115kV Transmission Line (North) commences at a point on the North ½ of Section 6, Township 3 South, Range 1 East SBM being approximately at the NW corner of the NE1/4 of said Section 6. Thence proceeding in a Southeasterly direction for approximately 3,100 Feet to a point on the South line of the NE1/4 of said Section 6 approximately .25 miles from the East Section line of said Section 6 also known as the Point of Termination.

EXHIBIT A

The second segment of the existing 115kv Transmission Line (North) commences at the SE corner of Section 2 and the SW corner of Section 1, Township 3 South, Range 1 East SBM. Thence said line continues in a due east direction approximately 5.0 miles through Sections 2, 4, 6, 8, 9, 10, and 12 of Township 3 South, Range 2 East SBM to the NE corner of Section 12, Township 3 South, Range 2 East SBM, also known as the Point of Termination.

Subject to a land survey, the total distance of the Right of Way 2 (existing 115kv Transmission Line (North)) across the Morongo Reservation is approximately 5.50 miles, with a width of 50 feet and covering an area of approximately 40 acres.

Subject to a land survey, the lands of the Morongo Indian Reservation occupied by Right of Way 2 are within the following named sections, townships, and ranges:

State of California
San Bernardino Base and Meridian
Sections 1, 2, 6, and 12 T. 3 S., R. 1 E.
Sections 2, 4, 6, 8, 9, 10, and 12, T. 3 S., R. 2 E.

Right-of-Way 3 (Shown on Exhibit B as the_Devers-San Bernardino, Devers-Vista No. 1, Devers-Vista No. 2, and Devers-El Casco 220kV electric transmission lines)

The first segment of the existing 220kV ROW corridor on the Morongo Reservation begins at the western edge of the Morongo Reservation at a point and adjacent to the north Section line of Section 6, Township 3 South, Range 1 East SBM being approximately at the NW corner of the NE1/4 of said Section 6. Thence, the ROW proceeds in a due east direction for approximately .50 miles to the NE corner of said Section 6, also known as the point of termination.

The second segment of the existing 220kV ROW reenters the reservation at a point being approximately 1.75 miles due north of the intersection of S. San Gorgonio Avenue and the 10 freeway, also known as the SW corner of Section 34, Township 2 South, Range 1 East SBM. The ROW proceeds due east for approximately 0.50 miles before turning and proceeding in a southeast direction for approximately 0.75 miles. During a 0.50 mile portion of this short southeast segment, the existing ROW exits the Morongo reservation, passes through the Robertson's Ready Mix gravel pit, and reenters the Morongo reservation in Section 2, Township 3 South, Range 1 East SBM, being approximately .25 miles from the NW corner of said Section 2. The existing ROW then proceeds due east for approximately 1.50 miles, then turns and proceeds in a southeast direction for approximately 0.50 miles. Finally, the existing ROW proceeds mostly due east for approximately 5.75 miles to the intersection of Rushmore Avenue and Penland Road at the eastern edge of the Morongo reservation, also known as the NE corner of the NE1/4 of Section 12, Township 3 South, Range 2 East SBM.

EXHIBIT A

Subject to a land survey, the total distance of Right of Way 3 (existing 220kv Transmission Lines) is approximately 9.0 miles, with a width ranging between 400 to 450 feet and covering an area of approximately 340 acres.

Subject to a land survey, the lands of the Morongo Indian Reservation occupied by Right of Way 3 are within the following named sections, townships, and ranges:

State of California
San Bernardino Base and Meridian
Section 34, T. 2 S., R. 1 E.
Sections 1, 2, and 6 T. 3 S., R. 1 E.
Sections 2, 4, 6, 8, 9, 10, and 12, T. 3 S., R. 2 E.

EXHIBIT B

See attached

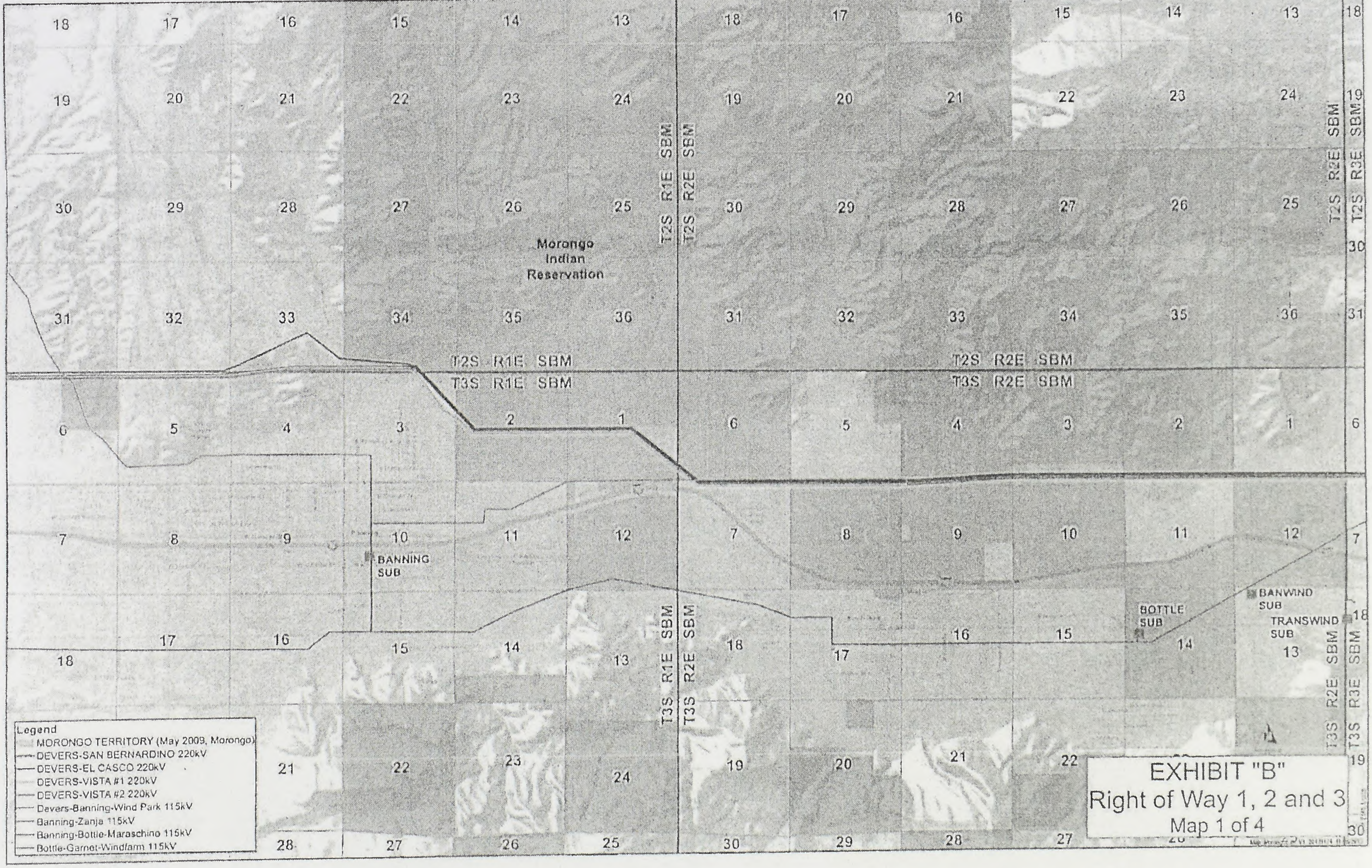

EXHIBIT "B"

Right of Way 1, 2 and 3

Map 1 of 4

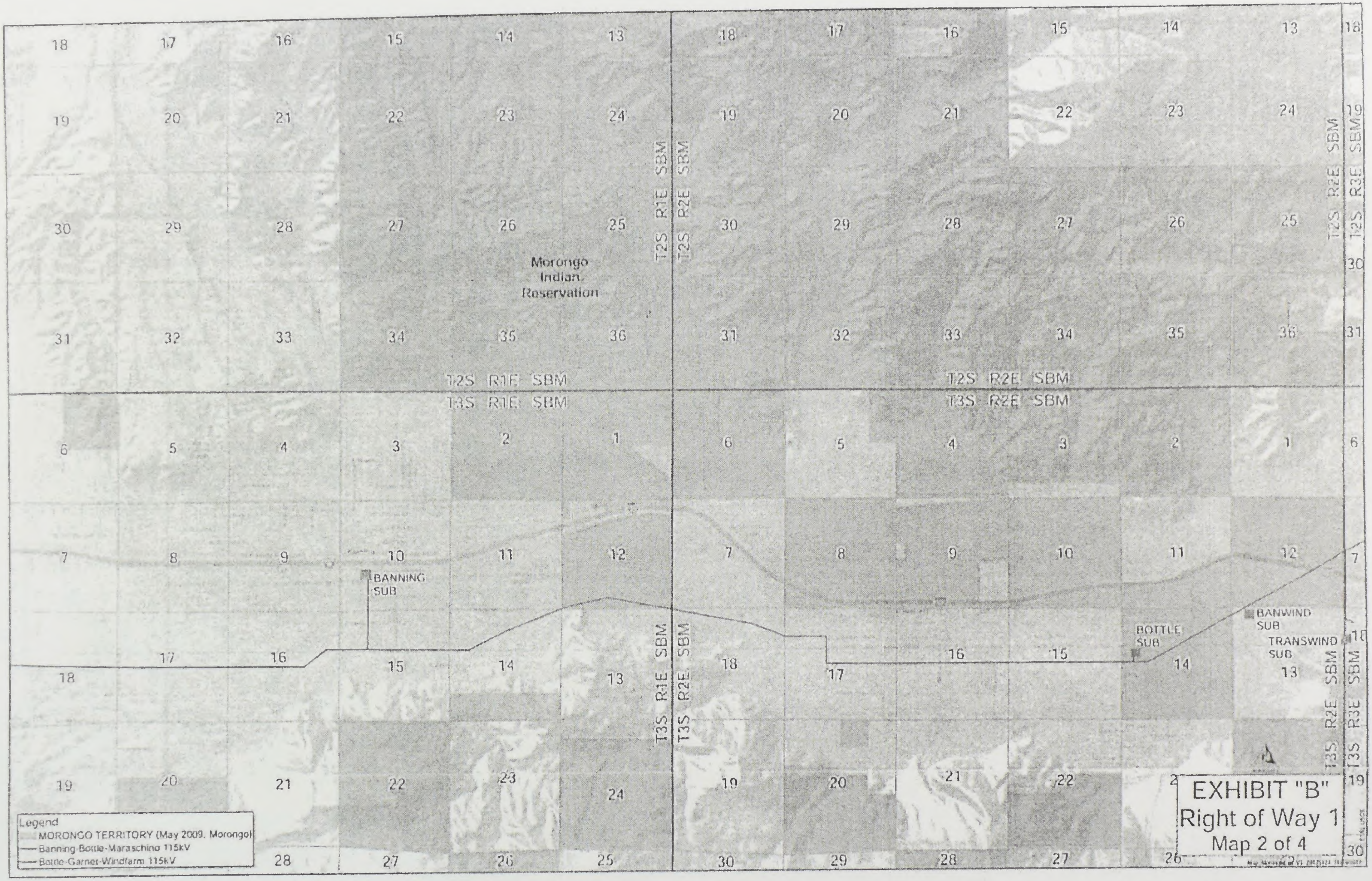

EXHIBIT "B"
Right of Way 1
Map 2 of 4

Morongo Indian Reservation
T2S R1E SBM
T3S R1E SBM
T2S R2E SBM
T3S R2E SBM
T2S R3E SBM
T3S R3E SBM
BANNING SUB
BOTTLE SUB
BANWIND SUB
TRANSWIND SUB
Legend
MORONGO TERRITORY (May 2009, Morongo)
Banning-Bottle-Maraschino 115kV
Bottle-Garnet-Windfarm 115kV

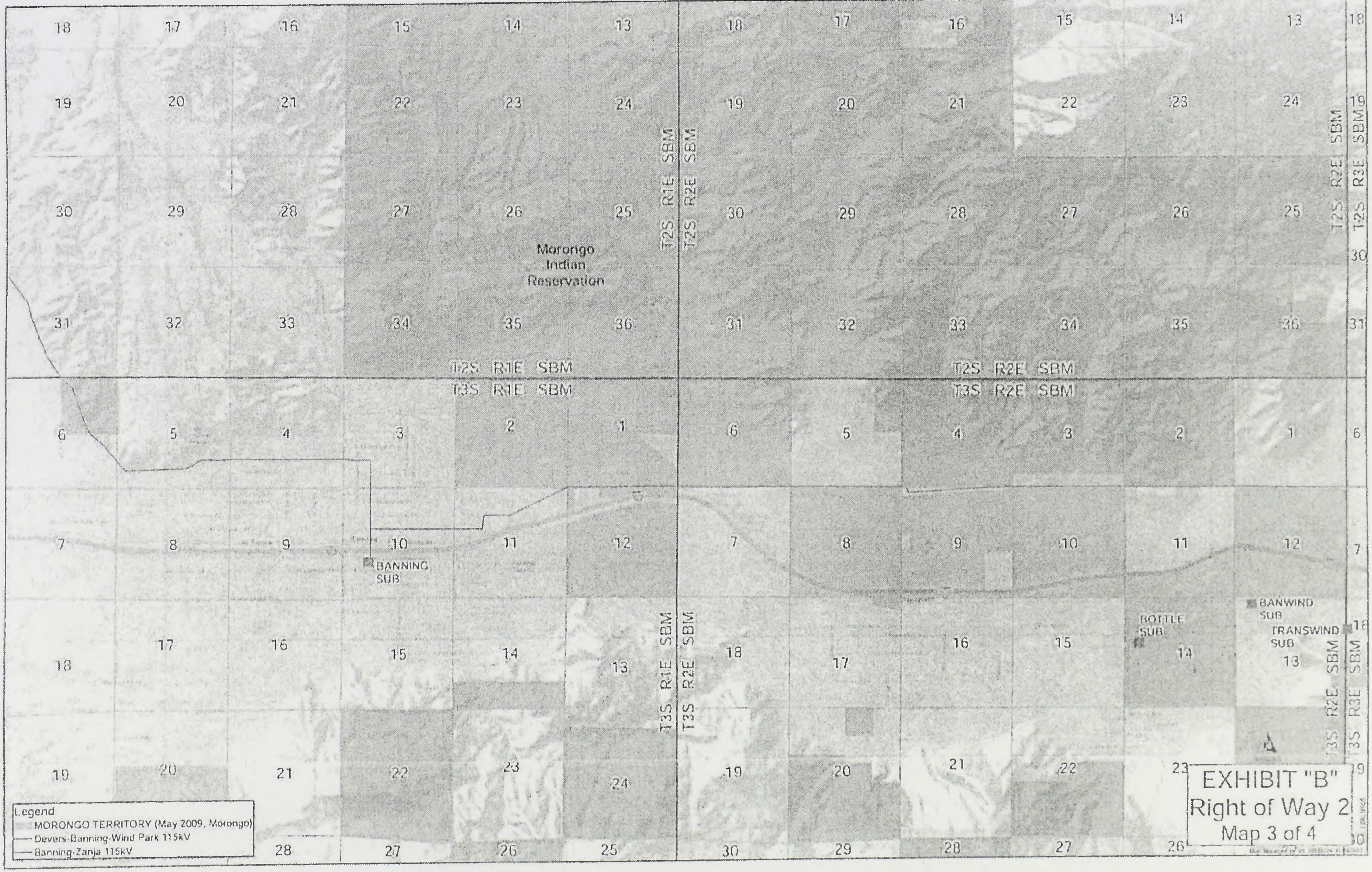
EXHIBIT "B"
Right of Way 2
Map 3 of 4

Legend
▨ MORONGO TERRITORY (May 2009, Morongo)
— Devers-Banning-Wind Park 115kV
— Banning-Zanja 115kV

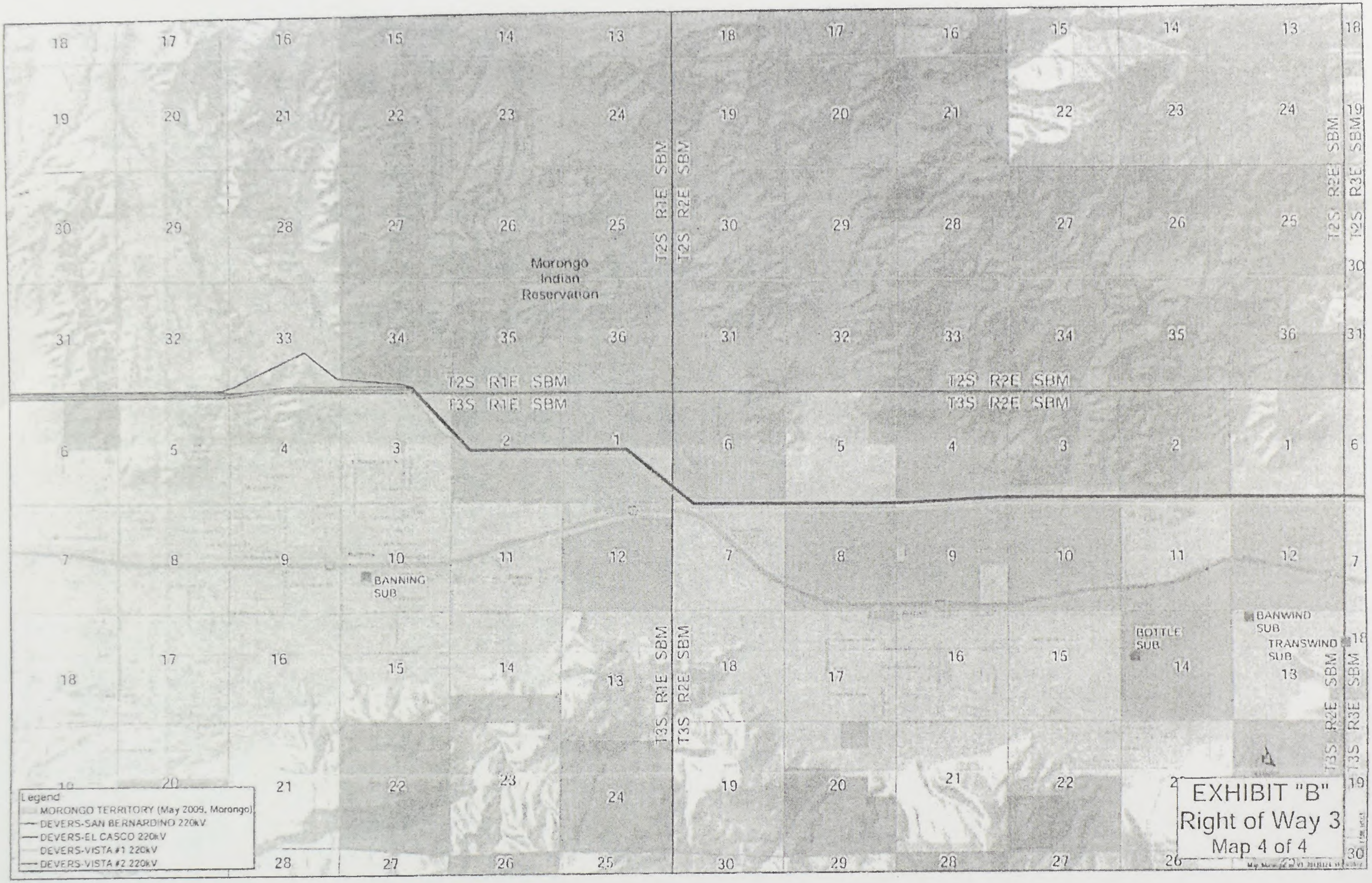
EXHIBIT "B"
Right of Way 3
Map 4 of 4

EXHIBIT C

See attached

EXHIBIT C

[to be put into recordable form]

KNOW ALL MEN BY THESE PRESENTS:

That the United States of America, acting by and through the Superintendent, Southern California Agency, Bureau of Indian Affairs, Department of the Interior, hereinafter referred to as "Grantor" under authority delegated by 209 DM 8, 230 DM 1, and 31AM 4 and Sacramento Redelegation Order No. 1 (43 F.R. 30131, July 13, 1978) and pursuant to the provisions of the Act of February 5, 1948 (62 Stat. 17, 25 U.S.C. Sec. 323-328), and Title 25, Code of Federal Regulations, Part 169, for good and valuable consideration as set forth herein, does hereby grant to the Southern California Edison Company, a California corporation and its successors and permitted assigns ("SCE"), with an address of 2131 Walnut Grove Avenue, Rosemead, California 91770, hereinafter referred to as "Grantee", all those certain exclusive easements and rights-of-way (the "Easements and Rights-of-Ways") for the Term (as defined below) to:

1. construct, operate, use, maintain, inspect, repair, renew, replace, reconstruct, enlarge, alter, add to, improve, relocate and remove, at any time and from time to time, electric lines, consisting of one or more lines of metal towers, poles and other structures, wires, cables, including overhead and underground ground wires and communication circuits, with necessary and convenient foundations, conduits, vaults, pull boxes, guy wires and anchors, insulators and cross arms placed on said structures, and other fixtures, appliances and appurtenances connected therewith, including but not limited to aviation marking and/or lighting, necessary or convenient for the construction, operation, inspection, regulation, control grounding and maintenance of electric lines and communication circuits, for the purpose of transmitting, distributing, regulating and controlling electronic information and electric energy to be used for light, heat, power, communication, and other purposes, together with the right-of-way and/or easement for roads, ingress, egress and other convenient purposes, needed or desired at any time and from time to time by SCE, and, except as otherwise provided herein, the right to clear and to keep clear the Easements and Rights-of-Way and the real property affected thereby, free from explosives, buildings, structures, equipment, trees, vines, brush, combustible materials and any and all other obstructions of any kind, including, but not in any way in limitation of the generality of the foregoing, swimming pools and appurtenances, fences (other than farm, grazing or pasture fences), and the parking of automobiles, trucks or other mechanical equipment, for protection from fire and other hazards and from interference with ingress and egress and with the unobstructed use of the Easements and Rights-of-Way and every part thereof, and for any and all purposes herein mentioned; in, under, on, over, along and across those certain strips of land (the "Rights-of-Way") lying within that certain real property of the Morongo Band of Mission Indians (the "Tribe"), as described in

Exhibit A and depicted on Exhibit B, each as attached hereto and incorporated herewith;

2. install, maintain and operate a communication system for any internal or commercial use by SCE and corporations controlled by or under common control with SCE, and the right to apportion to telecommunication providers and others for commercial use of the communication system, or parts thereof, herein collectively referred to as "System," consisting of communications-related equipment, antennas and fiber optic cables, herein collectively referred to as "Facilities," and the right of access to said System and Facilities, for transmitting data, voice or intelligence by electrical, optical or other electromagnetic means, and other incidental purposes, both overhead and underground in, under, on, over, along and across the Easement and Rights-of-Way;

3. subject to Grantor's prior consent, which consent shall not unreasonably be withheld, to assign, in whole or in part, to others possessing the financial and other capabilities to fulfill Grantee's obligations hereunder, and the right to apportion or divide in whatever manner SCE deems desirable; *provided,* that any assignee(s) shall be subject to all of the same terms and conditions as apply to SCE, including the terms applying to SCE and any assignee(s) thereof in that certain Development and Coordination Agreement (the "DCA") and that certain Transmission Capability Lease (the "Lease") by and between SCE and Morongo Transmission LLC respectively, in effect at the time of such assignment, and further provided that any such assignment shall not constitute a novation of this Grant of Easements and Rights-of-Way ("Grant"), the DCA or the Lease unless agreed to by Grantor and consented to by the Tribe.

4. construct roads, use existing roads and make such additions thereto, on lands of the Tribe within the Easements and Rights-of-Way, as shall be reasonably necessary or convenient to SCE's access to and use of the Easements and Rights-of-Way, or any extension of the Easements and Rights-of-Way on the lands of others, and the right to use all reasonably necessary and convenient means of ingress to and egress from the Easements and Rights-of-Way, or said extension thereof, from the public highway or tribally-maintained or controlled roads most convenient thereto, for the uses and purposes and the exercising of the rights herein granted. SCE shall also have the right to establish and utilize within the Easements and Rights-of-Way such temporary marshalling and material staging yards, as SCE reasonably determines to be necessary for construction activities related to SCE's use, operation, and maintenance of the Easements and Right-of- Way, *provided* that all such SCE facilities shall be developed and maintained in a manner that will, to the extent feasible and practicable, prevent erosion and alteration of existing land forms and naturally-occurring vegetation, to the extent consistent with SCE's need to manage vegetation within its transmission corridors. SCE shall work with appropriate Morongo Tribal staff to establish the access roads and construction staging areas on lands of the Tribe outside the Easements and Rights-of-Way.

5. request from the Tribe, temporary entry permits to allow SCE to use tribal lands near and adjoining SCE's Easements and Rights-of-Way in order to facilitate construction activities within SCE's Easements and Rights-of-Way, which permits shall not unreasonably be withheld, subject to the provisions of the Agreement Related to the Grant of Easements and Rights-Of-Way For Electric Transmission Lines and Appurtenant Fiber-Optic Telecommunications Lines On and Across Lands of the Morongo Indian Reservation entered into by Tribe and SCE dated November 27, 2012 ("Agreement") and subject to SCE's being charged no more than $2,500 per entry permit, payable directly to the Tribe, to temporarily enter onto the Morongo Reservation (the "Reservation"), and further subject to reasonable permit terms and conditions designed to mitigate adverse environmental impacts from such activities, including obligating SCE to restore lands temporarily used in construction to their previous natural state to the extent feasible, including as appropriate revegetation with native plants. In the event alternate public or tribal roads are constructed which, in the opinion of SCE, will provide SCE with access to the Easements and Rights-of-Way, or said extension thereof, as convenient and adequate as that which SCE may then be using, SCE agrees to quitclaim any such portion or portions of the access roads no longer required hereunder as may be determined by SCE to the owner thereof.

6. install and use gates in any and all fences which are now or may hereafter be constructed on the Easements and Rights-of-Way, for the purpose of permitting at all times convenient entry to and along the Easements and Rights-of-Way. Any gates that are installed by SCE on said lands shall be locked with SCE's locks, and also, if the Tribe so desires, may be locked with the Tribe's locks, in such a manner that either SCE or the Tribe can lock or unlock the gates.

7. make such surface cuts within the Easements and Rights-of-Way as may be necessary to maintain the clearance between the wires and cables and the surface of the ground that may be required by the orders of the California Public Utilities Commission (the "CPUC"), or other governmental body having jurisdiction thereof, or that may be necessary for the economical construction, maintenance or operation of said electric lines, communication circuits and appurtenances. SCE shall consult with the Tribe, and comply with the Tribe's reasonable instructions, if any are given after due notice, concerning the disposition of any soil or other materials on the Reservation, and shall notify the Tribe of the discovery of any materials of archeological or historic significance, which materials are and shall remain the Tribe's property. No soil or other materials may be removed from the Reservation without the Tribe's prior consent. All towers, poles, wires, cables, including ground wires and communication circuits, and any other electrical materials are and shall remain the property of SCE.

8. trim or top and to keep trimmed or topped any and all trees on the lands within the Easements and Rights-of-Way, and adjacent to the Easements and Rights-of Way, in consultation with the Tribe, to such heights as in the judgment of SCE, its permitted heirs, successors or assigns, shall be reasonably necessary under

applicable standards for the proper construction, operation and maintenance of said electric lines and communication circuits.

9. No person or entity shall be permitted or allowed to deposit earth, rubbish, debris or any other substance or material, whether combustible or noncombustible, on the Easements and Rights-of-Way, or so near thereto as to constitute, in the reasonable opinion of SCE or successors, assigns or agents, a menace or danger to said electric lines and communication circuits or which may, in the opinion of SCE, interfere with SCE' s ready access to said electric lines and communication circuits.

LEGAL DESCRIPTION.

The Rights-of-Way are described as follows:

The Rights-of-Way are described as follows: Right-of-Way 1 is a strip of land covering approximately twenty-six (26) acres, as described in **Exhibit** "A" and depicted on **Exhibit** "B". Right-of-Way 2 is a strip of land covering approximately forty (40) acres, as described in **Exhibit** "A" and depicted on **Exhibit** "B". Right-of-Way 3 is a strip of land covering approximately three hundred forty (340) acres described in **Exhibit** "A" and depicted on **Exhibit** "B". Right-of-Way 4 is that corridor described in **Exhibit** "A" and depicted on **Exhibit** "B". Upon completion of final engineering and SCE's obtaining of required approvals from the California Public Utilities Commission ("**CPUC**") and other relevant governmental authorities, Right-of-Way 4 shall be amended to conform to said engineering and approvals. SCE shall submit final maps of definite location for the facilities to be placed in Right-of-Way 4 upon completion of construction.

THIS GRANT is subject to the following additional terms and conditions:

1. Upon relocation and energization of each of SCE's facilities to a different corridor or corridors on the Reservation, SCE immediately shall remove each such facility, restore the land previously occupied by such facility to its natural state to the extent feasible, and quitclaim to the United States of America for the benefit of the beneficial owner of the trust lands formerly occupied by each such facility all of SCE's right, title and interest in said trust lands, and to convey to the fee owner all of SCE's right, title and interest to easements on non-trust lands within the boundaries of the Reservation that no longer are occupied by any of SCE's facilities and that are no longer used and useful to SCE.

2. Grantor reserves for the Tribe and its assigns and permittees, rights across (but not longitudinally along) the Easements and Rights-of-Way, for (1) underground water pipelines, (2) farm, grazing or pasture fences, and (3) roads, *provided*, however, that the exercise of such rights shall not interfere with or endanger, in the opinion of SCE, the operation or maintenance of the electric lines and communication circuits of SCE, or SCE's ready access to its said electric lines and communication circuits, or the exercise of any of the rights herein granted to SCE. In addition to said reserved rights for water pipelines, farm fences and roads, the Tribe and its assigns and permittees shall have only the additional right to cultivate the land within the

Easements and Rights-of-Way for any and all field or orchard crops which may be grown thereon or to use such land for grazing and pasturage, provided such uses shall not interfere with the rights herein granted to SCE, its successors and assigns, and to use said lands for any other purpose that is not inconsistent with applicable laws and regulations or SCE's right to access, maintain and safely operate its facilities. SCE, its successors, assigns and agents, shall not be liable for damage to, or removal of trees and vegetation, including loss of production, both present and future, where such damage, removal and loss occurs as a result of the exercise of the rights granted herein. The Easements and Rights-of-Way shall not be used for the interment of human remains.

3. SCE shall implement CPUC policies and design guidelines for power-frequency electric and magnetic fields ("EMF") for the design, construction, and operation of the facilities to be constructed on the Reservation to minimize any adverse impacts on the Reservation's environment and/or persons or property within the Reservation's boundaries. SCE will provide a copy of any EMF Field Management Plan applicable to the existing and/or future facilities to the Tribe for its review and comment, prior to submittal by SCE to the CPUC or any other applicable regulatory agency.

4. If and where the Easements and Rights-of-Way are under cultivation on the Effective Date (defined below), any underground cables, wires and conduits shall be laid so that the tops thereof shall be at least 36 inches below the surface of the ground. No person or entity may conduct or permit any activities on lands overlying underground facilities that would interfere with the safe access to or maintenance and operation of such existing or future facilities.

5. This Grant does not convey to SCE any right, title or interest in or to any oil, gas, petroleum or other mineral or hydrocarbon substances within or without the limits of the Easements and Rights-of-Way or otherwise; *provided*, that no person or entity, including the Tribe and its assigns and permittees, in prospecting for or developing oil, gas, petroleum or other mineral or hydrocarbon substances, will do so within the Easements and Rights-of-Ways or in such manner as will endanger or interfere with the structures and facilities erected and installed by SCE or with the operation or maintenance of the electric lines and communication circuits of SCE, and will not, without SCE's express written consent, which consent shall not unreasonably be withheld as long as no interference with or endangerment to SCE's facilities would result therefrom, construct, place or maintain, or permit to be constructed, placed or maintained, any oil or mud sump, derrick, drilling rig, oil storage tank or other structure of any kind whatsoever, on any portion of the Easements and Rights-of-Way.

6. No other easement or easements may be granted on, under or over the Easements and Rights-of-Way to any person, firm or corporation without the previous written consent of SCE, which consent shall not be unreasonably withheld as long as the proposed easement would not interfere with SCE's exercise of its rights under this Grant.

7. Notwithstanding any other provision of this Grant , Grantor expressly reserves on behalf of the Tribe, the right to construct, operate, maintain and staff guard kiosks within the Easements and Rights-of-Way granted to SCE by this Grant, subject to the Tribe's compliance with applicable regulatory requirements and SCE's standards and criteria regarding such kiosks; *provided*, that such requirements and standards shall not preclude construction, operation,

maintenance and staffing of guard kiosks as long as such activity would not interfere with the safe access to or safe maintenance and operation of SCE's Facilities.

TERM OF GRANT. The term of this Grant (the "Term"), and SCE's obligation to pay consideration hereunder, shall commence for all purposes as of 12:01 a.m. on the later of (a) the effective date of the Agreement or (b) the date this Grant is executed by Grantor (the "Effective Date"). The Term shall terminate at 12:01 a.m. on the date fifty (50) years after the Effective Date, unless earlier terminated as set forth below.

EFFECTIVE DATE. This Grant of Easement shall become effective upon any and all necessary approvals of the United States Department of the Interior, Bureau of Indian Affairs and any other government agency(ies) whose approval is a condition precedent to the validity, performance and enforceability of this Grant of Easement, to the extent required under applicable law; *provided*, that the Tribe's consent to such approval is expressly contingent upon execution of the DCA.

TERMINATION AND REMEDIES FOR FAILURE OF CONDITIONS SUBSEQUENT, AND OTHER ACTS OF DEFAULT. This Grant shall be subject to termination if SCE commits and fails timely to cure a material breach of any of SCE's obligations under this Grant or the Agreement, including the obligation to make payments to the Tribe in amounts and when due. This Grant also shall be subject to termination, upon two years' notice, if, as of January 1, 2017: (a) SCE has not received all the "Required SCE Regulatory Approvals" (as defined in the DCA), or (b) Morongo Transmission LLC has submitted and pursued with diligence applications for "Required Investor Regulatory Approvals" (as defined in the DCA) but has not received all such approvals. Should this Grant be terminated in accordance with this Section and the effective termination date is not on the first day of the calendar year, SCE shall only be obligated to pay to the Tribe an apportioned amount of the Annual Fee due that partial year, allocated on a pro-rata basis.

CONSIDERATION.

As full monetary consideration for this Grant, inclusive of all rentals, fees, real property or personal taxes, special assessments, and other property assessments arising out of SCE' s past, present or future use of Tribal lands and the Easements and Rights-of-Way granted hereunder, SCE shall pay directly to the Tribe an annual fee, subject to adjustment, as set forth in the Agreement, such amount to be prorated for any partial calendar year to which payments may be applied. Except for adjustment as provided in the Agreement or Section 3 of this Grant, all payments by SCE pursuant to this Grant shall be non-refundable.

Said payments shall be made either at the main office of the Morongo Band of Mission Indians, located at 12700 Pumarra Road, Banning, CA 92220, or by electronic fund transfer to an account designated by the Tribe, no later than 5:00 p.m. on the Effective Date, and on the first day of the first month of each subsequent calendar year during the Term; *provided, however*, that, notwithstanding the foregoing, the initial payment under this Grant shall not be due until the date specified in the Agreement. Such initial payment hereunder shall cover the period commencing on the first day of the month in which the Effective Date occurs, and shall be in addition to any monthly Tribal use permit fee that SCE may have paid for the month in which the Effective Date occurs.

TRIBAL APPROVAL AND WAIVER. The Tribe has consented in writing to the survey of the Easements and Rights-of-Way to be granted hereunder, has waived in writing the provisions of 25 C.F.R. Part 169.12 and 169.14 concerning the requirement of an appraisal of the value of the Rights-of-Way and other damages, and has consented in writing to the payment of annual installments of the consideration required hereunder for this Grant.

In accordance with the authority vested in Grantor, including without limitation my power set forth in 25 C.F.R. § 1.2 to waive and make exceptions to Grantor's regulations, Grantor hereby specifically waives and makes exceptions to the application of any of the regulations of the Department of the Interior with regard to any provision of this Grant which is inconsistent with any of such regulations, and Grantor finds that this waiver and exception is permitted by law and is in the best interests of the Tribe.

[Signature page, notary blocks and exhibits to be added.]

EXHIBIT A to Federal Grant

EXHIBIT A

Right-of-Way 1 (Shown on Exhibit B as the Banning-Bottle-Maraschino and the Bottle–Garnet-Windfarm 115kV electric transmission line circuits)

The first segment of the existing 115kV Transmission Line (South) commences at the SW corner of Section 12, Township 3 South, Range 1 East SBM. Thence proceeds in a Northeasterly direction for approximately 2,200 Feet to a point. Thence proceeding in a Southeasterly direction for approximately 3,000 Feet to the SE corner of said Section 12 also known as the Point of Termination.

The second segment of the existing 115kv Transmission Line (South) commences at point on the West line of Section 14, Township 3 South, Range 2 East SBM, about .5 miles from the North section line of said Section 14. Thence said line continues in a due east direction approximately 0.25 miles, which includes a spur line that goes about 450 feet north in the western half of Section 14 into the Bottle Substation. Thence, said main line continues in a northeasterly direction for about 4,550 Ft to the NE corner of Section 14, Township 3 South, Range 2 East SBM also known as the Point of Termination.

The third segment of the existing 115kv Transmission Line (South) commences near the SW corner of Section 12, Township 3 South, Range 2 East SBM for about 1.0 miles to a point on the East line Section 12 about .50 miles from the North line of said Section 12, also known as the Point of Termination.

Subject to a land survey, the total distance of Right of Way 1 (existing 115kv Transmission Line (South)) is approximately 3.75 miles, with a width of 50 feet and covering an area of approximately 26 acres.

Subject to a land survey, the lands of the Morongo Indian Reservation occupied by Right of Way 1 are within the following named sections, townships, and ranges:

State of California
San Bernardino Base and Meridian
Section 12, T. 3 S., R. 1 E.
Sections 12 and 14, T. 3 S., R. 2 E.

Right-of-Way 2 (Shown on Exhibit B as the Devers-Banning-Wind Park and the Banning-Zanja 115kV electric transmission line circuits)

The first segment of the existing 115kV Transmission Line (North) commences at a point on the North ½ of Section 6, Township 3 South, Range 1 East SBM being approximately at the NW corner of the NE1/4 of said Section 6. Thence proceeding in a Southeasterly direction for approximately 3,100 Feet to a point on the South line of the NE1/4 of said Section 6 approximately .25 miles from the East Section line of said Section 6 also known as the Point of Termination.

The second segment of the existing 115kv Transmission Line (North) commences at the SE corner of Section 2 and the SW corner of Section 1, Township 3 South, Range 1 East SBM. Thence said line continues in a due east direction approximately 5.0 miles through Sections 2, 4, 6, 8, 9, 10, and 12 of Township 3 South, Range 2 East SBM to the NE corner of Section 12, Township 3 South, Range 2 East SBM, also known as the Point of Termination.

Subject to a land survey, the total distance of the Right of Way 2 (existing 115kv Transmission Line (North)) across the Morongo Reservation is approximately 5.50 miles, with a width of 50 feet and covering an area of approximately 40 acres.

Subject to a land survey, the lands of the Morongo Indian Reservation occupied by Right of Way 2 are within the following named sections, townships, and ranges:

State of California
San Bernardino Base and Meridian
Sections 1, 2, 6, and 12 T. 3 S., R. 1 E.
Sections 2, 4, 6, 8, 9, 10, and 12, T. 3 S., R. 2 E.

Right-of-Way 3 (Shown on Exhibit B as the Devers-San Bernardino, Devers-Vista No. 1, Devers-Vista No. 2, and Devers-El Casco 220kV electric transmission lines)

The first segment of the existing 220kV ROW corridor on the Morongo Reservation begins at the western edge of the Morongo Reservation at a point and adjacent to the north Section line of Section 6, Township 3 South, Range 1 East SBM being approximately at the NW corner of the NE1/4 of said Section 6. Thence, the ROW proceeds in a due east direction for approximately .50 miles to the NE corner of said Section 6, also known as the point of termination.

The second segment of the existing 220kV ROW reenters the reservation at a point being approximately 1.75 miles due north of the intersection of S. San Gorgonio Avenue and the 10 freeway, also known as the SW corner of Section 34, Township 2 South, Range 1 East SBM. The ROW proceeds due east for approximately 0.50 miles before turning and proceeding in a southeast direction for approximately 0.75 miles. During a 0.50 mile portion of this short southeast segment, the existing ROW exits the Morongo reservation, passes through the Robertson's Ready Mix gravel pit, and reenters the Morongo reservation in Section 2, Township 3 South, Range 1 East SBM, being approximately .25 miles from the NW corner of said Section 2. The existing ROW then proceeds due east for approximately 1.50 miles, then turns and proceeds in a southeast direction for approximately 0.50 miles. Finally, the existing ROW proceeds mostly due east for approximately 5.75 miles to the intersection of Rushmore Avenue and Penland Road at the eastern edge of the Morongo reservation, also known as the NE corner of the NE1/4 of Section 12, Township 3 South, Range 2 East SBM.

EXHIBIT A

Subject to a land survey, the total distance of Right of Way 3 (existing 220kv Transmission Lines) is approximately 9.0 miles, with a width ranging between 400 to 450 feet and covering an area of approximately 340 acres.

Subject to a land survey, the lands of the Morongo Indian Reservation occupied by Right of Way 3 are within the following named sections, townships, and ranges:

State of California
San Bernardino Base and Meridian
Section 34, T. 2 S., R. 1 E.
Sections 1, 2, and 6 T. 3 S., R. 1 E.
Sections 2, 4, 6, 8, 9, 10, and 12, T. 3 S., R. 2 E.

EXHIBIT B to Federal Grant

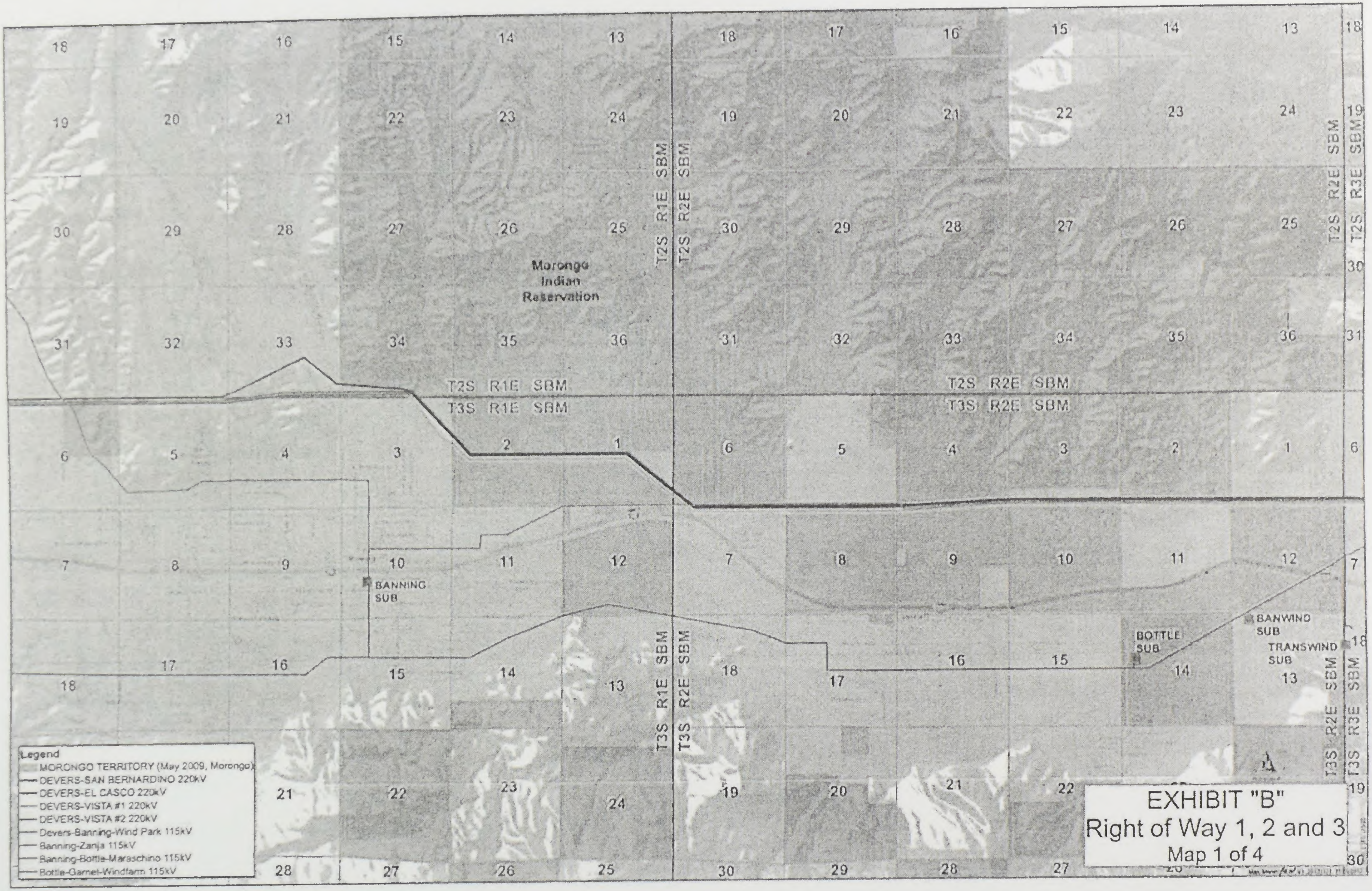

EXHIBIT "B"
Right of Way 1, 2 and 3
Map 1 of 4

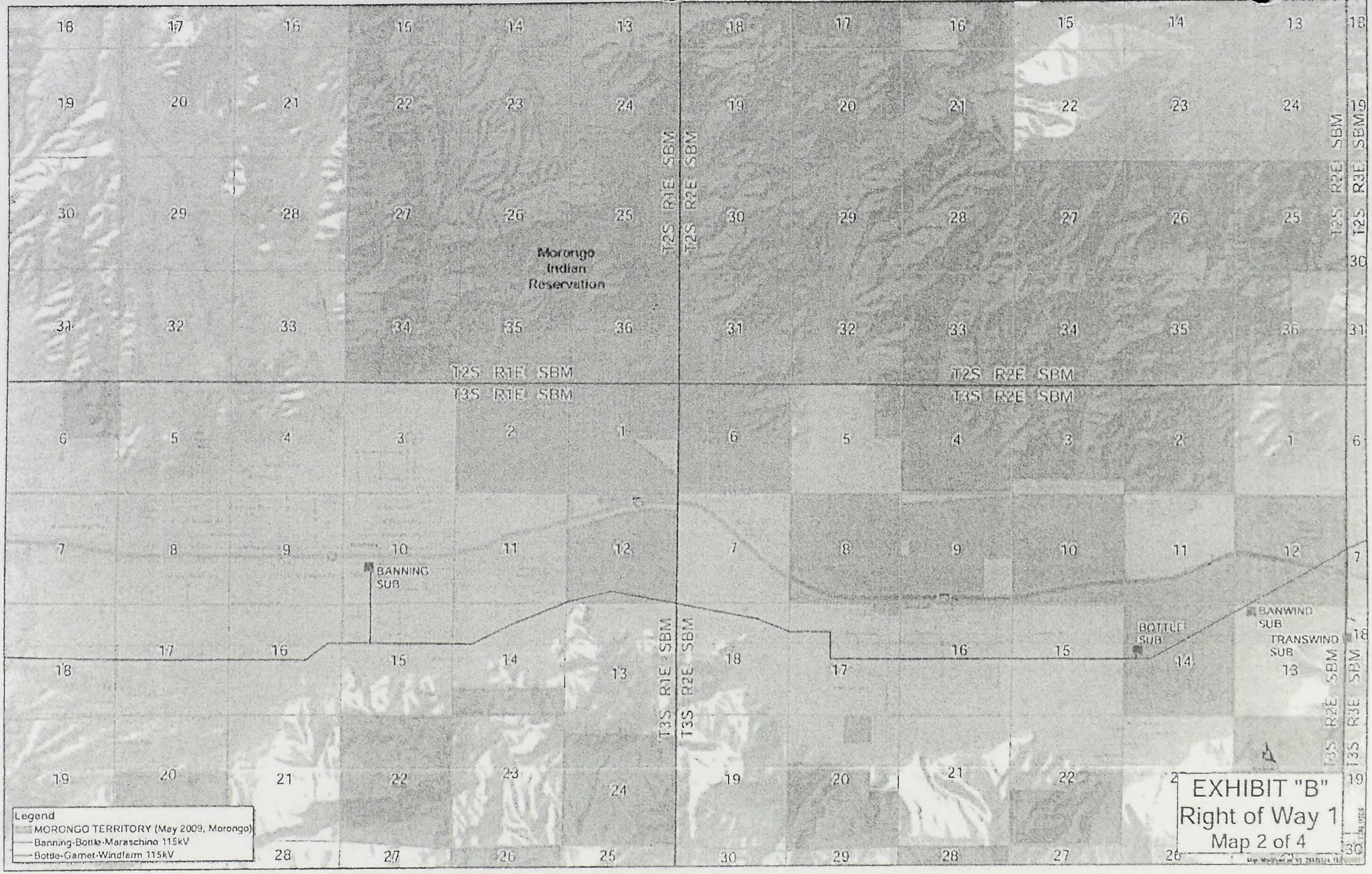
T2S R1E SBM
T3S R1E SBM
T2S R2E SBM
T3S R2E SBM
T2S R3E SBM
T3S R3E SBM
Morongo Indian Reservation
BANNING SUB
BOTTLE SUB
BANWIND SUB
TRANSWIND SUB
Legend
MORONGO TERRITORY (May 2009, Morongo)
Banning-Bottle-Maraschino 115kV
Bottle-Garnet-Windfarm 115kV

EXHIBIT "B"
Right of Way 1
Map 2 of 4

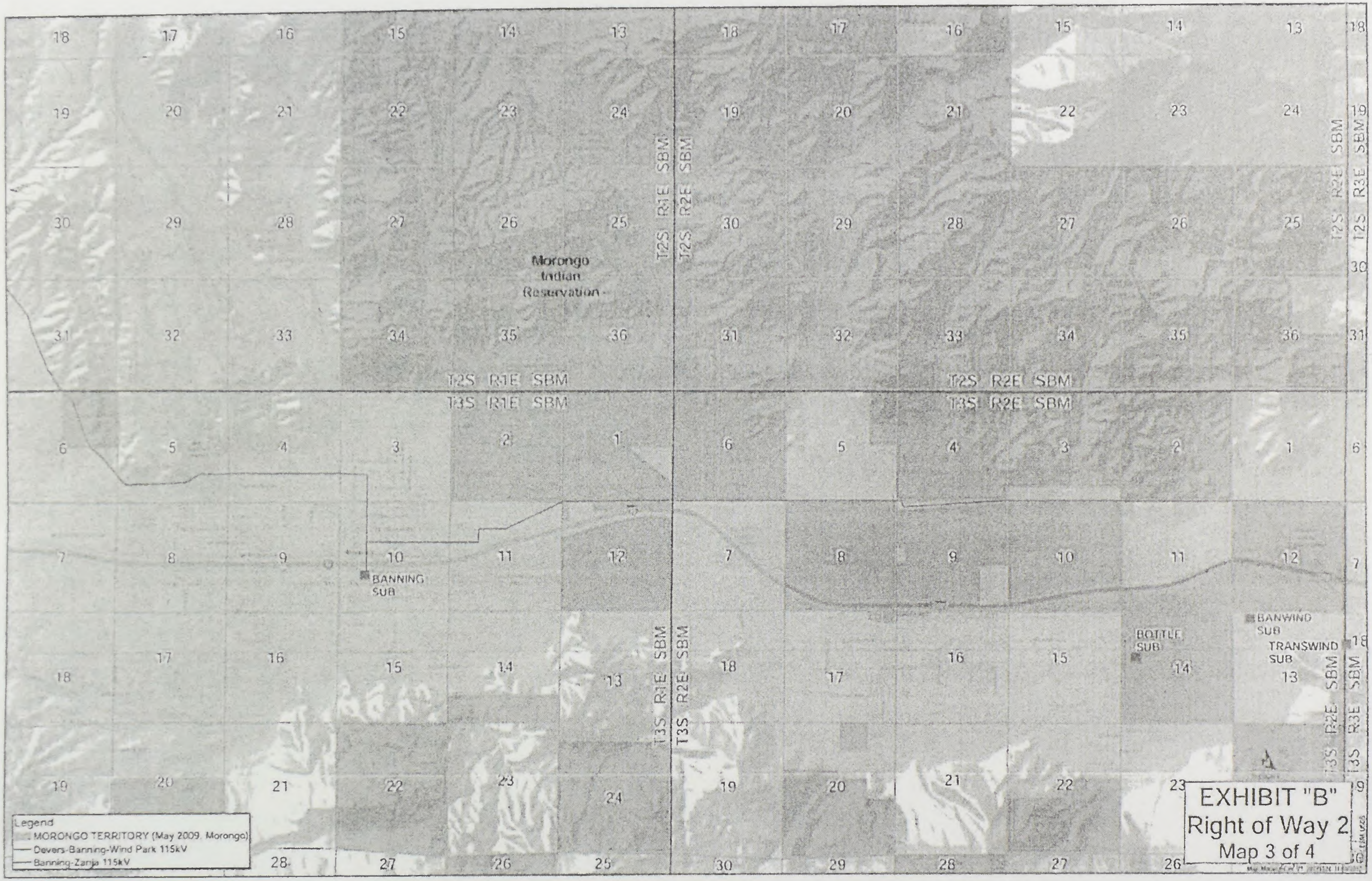

EXHIBIT "B"
Right of Way 2
Map 3 of 4

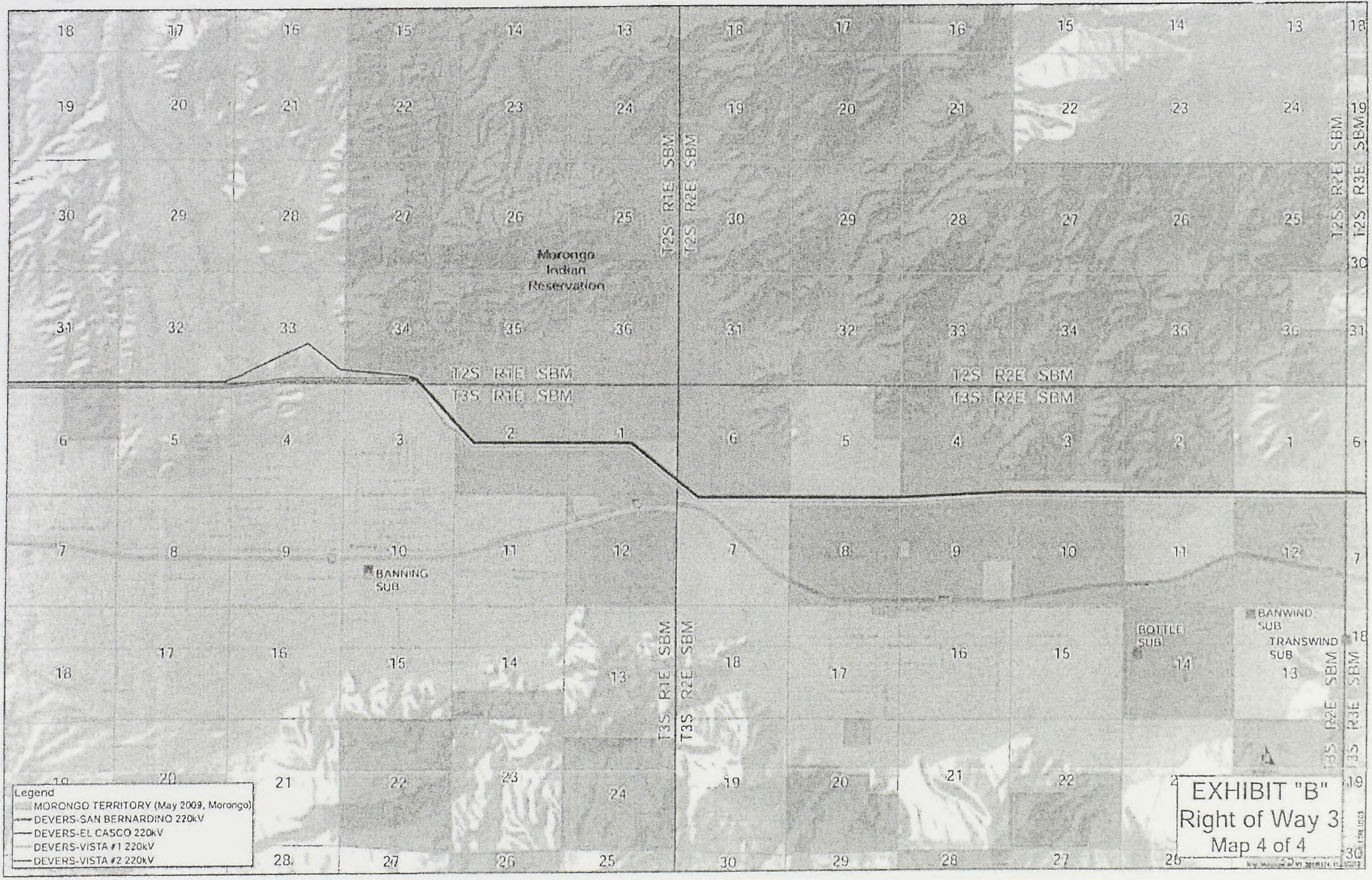

EXHIBIT "B"
Right of Way 3
Map 4 of 4

EXHIBIT D

See attached

WEST OF DEVERS UPGRADE

DEVELOPMENT AND COORDINATION AGREEMENT

DEVELOPMENT AND COORDINATION AGREEMENT

This DEVELOPMENT AND COORDINATION AGREEMENT ("DCA") is made and entered into as of November 27, 2012 (the "Effective Date"), by and between Southern California Edison Company, a California corporation ("SCE"), and Morongo Transmission LLC, a Delaware limited liability company ("Investor"). Each of SCE and Investor shall be referred to herein individually as a "Party" and collectively as the "Parties."

RECITALS

WHEREAS, SCE has been developing a transmission project known as the West of Devers Upgrade Project in its service territory (as more fully defined herein, the "Project"), which includes approximately 48 corridor miles of new 220kV transmission lines (as more fully defined herein, the "Subject Facilities");

WHEREAS, SCE and the Morongo Band of Mission Indians ("Morongo"), the federally-recognized American Indian Tribe exercising jurisdiction over lands within the boundaries of the Morongo Indian Reservation ("Reservation"), are in discussions regarding Morongo's consent to the Grant pursuant to 25 U.S.C. Section 323 of rights-of-way for SCE transmission facilities crossing the Reservation (as more fully described herein, "ROW Grant"), including the facilities associated with the Project, and the Agreement Related to the Grant of Easements and Rights-of-Way for Electric Transmission Lines and Appurtenant Fiber-Optic Telecommunications Lines and Access Roads on and Across Lands of the Morongo Indian Reservation between SCE and Morongo entered into as of the Effective Date (the "ROW Agreement," and together with the ROW Grant, the "ROW Documents"); and

WHEREAS, Investor is owned by Morongo and Coachella Partners, LLC, and as a condition of Morongo agreeing to consent to the ROW Grant and enter into the ROW Agreement, Morongo is requiring SCE and Investor to enter into an option (as more fully described herein, the "Option") to lease a portion of the Transfer Capability (as defined below) in the Subject Facilities;

NOW THEREFORE, and in consideration of the foregoing, and of the mutual promises, covenants and conditions set forth herein, and other good and valuable consideration, the Parties hereto, intending to be legally bound by the terms and conditions set forth in this DCA, hereby agree, subject to the terms and conditions of this DCA, as follows:

ARTICLE I. DEFINITIONS; RULES OF INTERPRETATION

Section 1.1 Definitions. As used in this DCA, the following terms shall have the following meanings unless otherwise stated or the context otherwise requires:

"AFUDC" refers to an Allowance for Funds Used During Construction, recognizing the cost to SCE of financing the development, design, permitting, engineering, procurement, and construction of the Subject Facilities. AFUDC does not apply to CWIP in Ratebase.

"Applicable Portion of Property Taxes" means, for any period after the COD, (a) if the Property Taxes on the Subject Facilities are assessed against SCE and no Property Taxes are assessed on the Transfer Capability against Investor, the aggregate amount of any such Property Taxes in such period multiplied by the Investor Percentage Interest for such period, and (b) if the Property Taxes on the Subject Facilities are assessed against both SCE and Investor, the aggregate amount of such Property Taxes that are directly attributable to Investor's Transfer Capability in such period.

"Applicable Reliability Standard" means reliability standards established by the WECC and reliability standards approved by FERC under Section 215 of the Federal Power Act to provide for reliable operation of the bulk power system or, if the WECC and FERC no longer have such standards, reliability standards promulgated by any federal or state agency exercising valid jurisdiction over the Subject Facilities.

"Arbitrator" has the meaning set forth in Section 10.2 (Management Negotiations) hereof.

"Balancing Authority" means the responsible entity that integrates resource plans ahead of time, maintains load-interchange-generation balance within a Balancing Authority Area, and supports interconnection frequency in real time.

"Balancing Authority Area" means the collection of generation, transmission, and loads within the metered boundaries of the Balancing Authority. The Balancing Authority maintains load-resource balance within this area.

"Business Day" means any day except Saturday, Sunday or a weekday on which commercial banks in New York City, New York or Los Angeles, California are required or authorized to be closed.

"CAISO" means the California Independent System Operator Corporation or its successors.

"CAISO Agreements" means the electric tariff at any time filed with FERC by the CAISO (or any successor System Operator) and any other applicable CAISO (or any successor System Operator) agreements, tariffs, manuals, protocols or rules setting forth the rights and obligations of Persons with respect to the CAISO (or any successor System Operator) controlled grid, or any successor electric tariff at any time filed with FERC setting forth the rights and obligations of Persons with respect to SCE's transmission system.

"CAISO Eligible Customer" means an "Eligible Customer" as defined in the CAISO Agreements or any other successor customer who is eligible to obtain transmission service pursuant to the CAISO Agreements.

"Commercial Operation Date" and "COD" means the date on which the Project begins full commercial operation and Operational Control of the Project has been transferred to and accepted by the CAISO (or any successor System Operator) in accordance with the terms of the CAISO Agreements. For the avoidance of doubt, the Project shall not be deemed to have achieved COD for purposes of this DCA unless and until its commercial operations are of sufficient scope so that, assuming Investor has all requisite approvals as detailed in this DCA and Investor has validly exercised and closed its Option, Investor would be eligible to begin collecting the full amount of its FERC-approved revenue requirement from the CAISO (or any successor System Operator) for the Subject Facilities.

"Costs of Transfer Capability" means 101% of the sum of the Prepaid Rent plus all reasonably incurred project costs; development costs; regulatory costs; transactional costs; sales, use or excise tax costs; and Financing Costs incurred by Investor allocated to Investor's Transfer Capability. For purposes of clarity, the extra one percent is intended to account for, among other costs, the ordinary and customary lenders' fees that SCE would have incurred if it held Investor's Transfer Capability.

"CPUC" means the California Public Utilities Commission.

"CWIP in Ratebase" means the portion of the investment that qualifies for current return and therefore does not accrue AFUDC.

"DCA" has the meaning set forth in the introductory paragraph hereto.

"Effective Date" has the meaning set forth in the introductory paragraph hereto.

"Event of Default" has the meaning set forth in Section 9.1 (Events of Default) hereof.

"FERC" means the Federal Energy Regulatory Commission or any successor federal agency.

"Financing Costs" means (a) with respect to any bridge financing that Investor may consummate prior to the term financing that Investor will consummate for the final acquisition of Investor's Transfer Capability, all reasonable and customary financing costs, including without limitation, lenders' fees, consultants' fees (for Investor, its members and its lenders), lawyers' fees (for Investor, its members and its lenders), and interest associated with such bridge financing, and (b) with respect to the term financing that Investor will consummate for the final acquisition of its Transfer Capability, all reasonable and customary consultants' fees (for Investor, its members and its lenders), lawyers' fees (for Investor, its members and its lenders), and capitalized interest charged prior to commencement of rate recovery, and excluding any lenders' fees and any amounts set aside for reserve accounts.

"Force Majeure" means an event or circumstance that prevents one Party from performing its obligations hereunder, which event or circumstance was not foreseen or reasonably foreseeable as of the date this DCA is entered into, which is not within the control of or the result of the negligence of the affected Party, and which, by the exercise of due diligence, the Party is unable to mitigate or avoid or cause to be avoided, including but not limited to (but only to the extent that the following examples satisfy such definition) (a) acts of God, such as droughts, floods, earthquakes, and pestilence, (b) fires, explosions, and accidents, (c) war (declared or undeclared), riots, insurrection, rebellion, acts of the public enemy, acts of terrorism and sabotage, blockades, and embargoes, (d) storms and other climatic and weather conditions that are abnormally severe for the period of time when, and in the area where, such storms or conditions occur, including typhoons, hurricanes, tornadoes and lightning, (e) strikes or other labor disturbances, (f) changes in permits from Governmental Authorities or the conditions imposed thereunder or the failure of a Governmental Authority to issue, modify, amend or renew such permits not due to the failure of the affected Party to timely submit and diligently pursue applications, and (g) the enactment, adoption, promulgation, modification, or repeal after the date hereof of any applicable law. Notwithstanding the foregoing, under no circumstance shall an event of Force Majeure be based on (i) changes in market conditions or the economic health of a Party, (ii) the failure of an affected Party to timely seek issuance, modification, amendment or extension of any permits, approvals, or other required action from any Governmental Authority, (iii) any action or inaction by the board of directors, members or managers of a Party to the extent that such Party is seeking to excuse its failure to perform as an event of Force Majeure, (iv) any failure to make payments or otherwise meet monetary obligations when or in amounts due, (v) any breach by an affected Party of its obligations hereunder, and/or (vi) any unexcused or uncured default or breach by SCE of the terms of the ROW Documents.

"Good Utility Practice" means (a) any of the practices, methods and acts engaged in or approved by a significant portion of the electric utility industry during the relevant time period, (b) any Applicable Reliability Standard, and/or (c) any of the practices, methods and acts which, in the exercise of reasonable judgment in light of the facts known at the time the decision was made, could have been expected to accomplish the desired result at a reasonable cost consistent with good business practices, reliability, safety and expedition. Good Utility Practice is not limited to the optimum practice, method, or act to the exclusion of all others, but rather to the acceptable practices, methods, or acts generally accepted in the region, including those practices required by Section 215(a)(3) of the Federal Power Act.

"Governmental Authority" means any federal, state, local, territorial or municipal government and any department, commission, board, bureau, agency, instrumentality, judicial or administrative body thereof.

"Investor Percentage Interest" means Investor's percentage interest in the Transfer Capability of the Subject Facilities, as determined pursuant to Section 4.2.1 (Investor Percentage Interest) hereof.

"Investor" has the meaning set forth in the introductory paragraph hereto.

"JAMS" has the meaning set forth in Section 10.3.1 (Arbitrator) hereof.

"Morongo" has the meaning set forth in the recitals hereto.

"Operational Control" means the rights of the Balancing Authority to direct the operation of transmission facilities and other electric plants in the Balancing Authority Area affecting the reliability of those facilities for the purpose of affording comparable, non-discriminatory transmission access and meeting Applicable Reliability Standards.

"Option" has the meaning set forth in Section 4.2 (Option to Lease Transfer Capability) hereof.

"Parties" and "Party" have the meanings set forth in the introductory paragraph hereto.

"Person" means any individual, corporation, partnership, limited liability company, joint venture, trust, unincorporated organization or Governmental Authority.

"Personal Property" means any and all electrical equipment, fixtures or other facilities and personal property associated with the Subject Facilities which does not constitute real property or improvements.

"Personal Property Taxes" means all taxes, assessments, license fees and other charges that are levied and assessed during the Term against Personal Property.

"Prepaid Rent" has the meaning set forth in Section 4.2.1 (Investor Percentage Interest) hereof.

"Project" has the meaning set forth in Exhibit A hereto.

"Property Taxes" means all Real Property Taxes and all Personal Property Taxes (without duplication).

"PTO" means a PTO or Participating Transmission Owner as defined in the CAISO Agreements.

"Real Property Taxes" means all real property general and special taxes and assessments levied and assessed against the land and improvements associated with the Subject Facilities, including without limitation real property assessments and taxes, water and sewer and other similar governmental charges levied upon or attributable to the Subject Facilities, assessments or charges levied upon or assessed against the Subject Facilities by any redevelopment agency, and any tax upon or with respect to the possession, leasing, operation, management, maintenance, alteration, repair, use or occupancy of the Subject Facilities or any portion thereof.

"Referral Date" has the meaning set forth in Section 10.2 (Management Negotiations) hereof.

"Required Investor Regulatory Approvals" means approvals from each Governmental Authority with authority over Investor's leasehold interests or entitlements in the Subject Facilities, including FERC, necessary for Investor to close the exercise of its Option, or to lease and finance its leasehold interest in the Subject Facilities, other than those approvals that would not have a material adverse effect on the exercise of the Option, leasing or financing of Investor's leasehold interest in the Subject Facilities if not obtained.

"Required Regulatory Approvals" means the Required Investor Regulatory Approvals and the Required SCE Regulatory Approvals.

"Required SCE Regulatory Approvals" means approvals from each Governmental Authority with authority over the Project, including the CPUC and FERC, necessary for SCE to consummate the transactions contemplated hereunder, or to develop, design, engineer, procure, construct, commission, own, operate, maintain and finance the Project, other than (a) those approvals that are not subject to the discretionary action of the applicable agency, and otherwise can be obtained in the ordinary course of business, and (b) those approvals that would not have a material adverse effect on the development, design, engineering, procurement, construction, commissioning, ownership, operation, maintenance or financing of the Project if not obtained.

"ROW Agreement" has the meaning set forth in the recitals hereto.

"ROW Documents" has the meaning set forth in the recitals hereto.

"ROW Grant" means the United States Department of the Interior's Grant of Easements and Rights-of-Way for Electric Transmission Lines and Appurtenant Fiber-Optic Telecommunications Lines and Access Roads On and Across Lands of the Morongo Indian Reservation pursuant to 25 U.S.C. Section 323 to which Morongo has consented as of the Effective Date.

"SCE" has the meaning set forth in the introductory paragraph hereto.

"SCE Representative Rate" has the meaning set forth in Section 5.4.2 (Capital Requirements) hereof.

"Share of O&M Costs" means the Lessee Share of O&M Costs as defined in the Transfer Capability Lease.

"Subject Facilities" has the meaning set forth in Exhibit A hereto.

"System Operator" means (a) the CAISO, (b) if SCE is no longer a member of the CAISO, the successor regional transmission entity, if any, that has Operational Control over SCE's transmission system and provides transmission service under rates, terms and conditions regulated by FERC pursuant to Section 205 of the Federal Power Act or any successor federal statute, or (c) if SCE is no longer a member of the CAISO or any such successor regional transmission entity, SCE.

"Target COD" means the target Commercial Operation Date, which as of the Effective Date is projected to be between March of 2019 and March of 2020, subject to modification by SCE.

"Target Construction Date" means the target date of commencement of construction of the Project, which as of the Effective Date is projected to be in March of 2016, subject to modification by SCE.

"Term" has the meaning set forth in Section 2.1 (Term) hereof.

"Total Actual Costs" means the total costs incurred by SCE to develop, design, permit, engineer, procure, construct, and commission the Subject Facilities, including AFUDC and post-construction mitigation measures, where applicable. For the avoidance of doubt, Total Actual Costs shall not include any fees payable by SCE to Morongo pursuant to the ROW Grant.

"Transfer Capability" means the maximum amount of power (in mega-watts) that can be transferred over part, or all, of the Subject Facilities in a reliable manner while meeting all of a specific set of defined pre-contingency and post-contingency system configurations and conditions in accordance with WECC standards and Good Utility Practices. Subject to Section 4.3.4 of the Transfer Capability Lease, the holder or lessee of Transfer Capability that is under the Operational Control of the CAISO (or any successor System Operator) for the benefit of and made available to CAISO Eligible Customers, is entitled to all associated rights and revenues from use of the Transfer Capability as defined (or subsequently defined) by the CAISO Agreements, or, in the absence of any such CAISO Agreements, all associated rights and revenues from use of the Transfer Capability, as defined (or subsequently defined) by the System Operator. Such holder or lessee shall not have any right or preference to transfer power over the Subject Facilities, or to interconnect with the Subject Facilities, by reason of holding or leasing Transfer Capability.

"Transfer Capability Lease" means the lease by SCE to Investor of a portion of the Subject Facilities' Transfer Capability in the form attached hereto as Exhibit B.

"Useful Life of the Project" means the period during which the Project can provide or is capable of providing transmission service, which SCE currently estimates to be approximately fifty-seven (57) years.

"WECC" means the Western Electricity Coordinating Council.

Section 1.2 Rules of Interpretation. Unless otherwise provided herein or the context otherwise requires, and to the extent consistent with the Parties' original intent hereunder: (a) words denoting the singular include the plural and vice versa; (b) words denoting a gender include both genders; (c) references to a particular part, clause, section, paragraph, article, party, exhibit, schedule or other attachment shall be a reference to, a part, clause, section, paragraph, or article of, or a party, exhibit, schedule or other attachment to the document in which the reference is contained; (d) a reference to any statute or regulation includes all statutes or regulations varying, consolidating or replacing the same from time to time, and a reference to a statute includes all regulations issued or otherwise applicable under that statute to the extent consistent with the Parties' original intent hereunder; (e) a reference to a particular section, paragraph or other part of a particular statute shall be deemed to be a reference to any other section, paragraph or other part substituted therefore from time to time; (f) a definition of or reference to any document, instrument or agreement includes any amendment or supplement to, or restatement, replacement, modification or novation of, any such document, instrument or agreement; (g) a reference to any person includes such person's successors and permitted assigns in that designated capacity; (h) any reference to "days" shall mean calendar days unless Business Days are expressly specified; and (i) examples shall not be construed to limit, expressly or by implication, the matter they illustrate.

ARTICLE II. TERM; OTHER AGREEMENTS

Section 2.1 Term. The "Term" of this DCA shall commence on the Effective Date and shall end (a) upon the expiration of the Option if such Option has not been exercised, (b) upon the date that the Parties enter into the Transfer Capability Lease, (c) on the effective date of a written agreement by both Parties that explicitly supersedes in its entirety or otherwise terminates this DCA, or (d) as otherwise provided for herein. The Transfer Capability Lease shall supersede this DCA in all respects and, upon the execution of the Transfer Capability Lease by SCE and Investor (or Investor's permitted designee as provided under Section 12.2.1 (Assignment)), this DCA shall be of no further force or effect.

Section 2.2 Subsequent Agreements. If Investor exercises its Option, then upon the closing of the Option, the Parties shall enter into the form of Transfer Capability Lease attached hereto as Exhibit B, and any estoppels and other acknowledgements of the foregoing as a Party's lenders may reasonably request. If a Party's lenders seek clarifications, amendments or modifications of this DCA or of the proposed Transfer Capability Lease, the Parties will exercise good faith efforts to accommodate such requests provided that no Party is hereby committing itself to any such clarification, amendment or modification of this DCA or of the proposed Transfer Capability Lease which, in such Party's reasonable discretion, would impair or interfere with the benefits that a Party expects to derive from its participation in the Project.

ARTICLE III. RESPONSIBILITY FOR DEVELOPMENT, CONSTRUCTION AND OPERATION OF PROJECT

Section 3.1 Responsibility for Development and Construction of the Project. SCE shall be solely responsible for the development, design, permitting, engineering, procurement, construction, and commissioning of the Project, and shall use commercially reasonable efforts to do within the timeline provided to Investor concurrent with the execution of this DCA. SCE shall provide Investor with an update to such timeline within ten (10) days of the end of each calendar year during the Term, and SCE agrees to timely respond to reasonable requests from Investor for more frequent updates during licensing and to provide quarterly updates during construction of the Project. SCE shall bear all costs for development, construction, and commissioning of the Project, until such time as Investor has exercised and closed its Option. SCE's activities and responsibilities for the Project shall include the acquisition of permits and land rights necessary to construct the Project, which shall be done in SCE's name and at SCE's expense. SCE and Investor shall cooperate in good faith in all activities reasonably necessary for SCE to complete construction and to achieve commercial operation of the Project by the Target COD.

Section 3.2 Performance Standards. SCE shall use commercially reasonable efforts to achieve the following objectives:

(a) to minimize capital costs of the Project;

(b) to minimize operational expenses of the Project;

(c) to maximize the Useful Life of the Project;

(d) not to exceed the budgets for the Project, subject to modification by SCE;

(e) to begin construction of the Project on or before the Target Construction Date; and

(f) to complete construction of the Project on or before the Target COD.

The Parties acknowledge that certain of the foregoing objectives may not always be compatible with each other and that, to comply with its obligations under this Section 3.2, SCE may be required to use commercially reasonable efforts to balance the various objectives.

Section 3.3 Project Documents. SCE shall ensure (including using its power of condemnation/eminent domain, if necessary) that any easements, rights-of-way, and other land rights, procurement contracts, engineering contracts, construction contracts, and other project documents associated with the Project do not prohibit the exercise and closing of the Option by Investor on the terms set forth in this DCA.

ARTICLE IV. OWNERSHIP AND OPTION

Section 4.1 SCE's Ownership. SCE shall own 100% of the ownership interests and, except to the extent that Investor has exercised and closed the Option, 100% of the Transfer Capability, in the Subject Facilities. To the extent that Investor has exercised and closed the Option, Investor shall have the right to lease a portion of the Transfer Capability in the Subject Facilities pursuant to the Transfer Capability Lease, but shall not be entitled to any ownership interest in the Subject Facilities.

Section 4.2 Option to Lease Transfer Capability. Subject to Section 4.3 (Conditions to Closing of Option) hereof, Investor shall have the option to lease Transfer Capability in the Subject Facilities pursuant to the Transfer Capability Lease as follows (the "Option"):

Section 4.2.1 Investor Percentage Interest. Investor shall have the option to lease from SCE and, upon Investor's exercise of such option, SCE shall have the obligation to lease to Investor, on the terms and conditions set forth in the Transfer Capability Lease, a percentage, as calculated in accordance with this Section, of the Transfer Capability on the Subject Facilities for thirty (30) years. Pursuant to Section 4.2.4 (Responsibility for Financing and Securing Recovery of Prepaid Rent) hereof, Investor shall make a prepaid rent payment for the Transfer Capability in an amount determined in Investor's sole discretion of up to $400,000,000 (the "Prepaid Rent"), and the Investor Percentage Interest of the Transfer Capability shall be determined by the following formula: (Amount of Prepaid Rent payment/Total Actual Costs) times 100, subject to adjustment as set forth in the Transfer Capability Lease.

Section 4.2.2 Exercise of Option. SCE shall give Investor (a) written notice of the Target COD at least one hundred twenty (120) days in advance of SCE's best estimate of the Target COD and (b) written notice of the COD at least thirty (30) days in advance of the COD (if SCE's best estimate of the Target COD or COD changes after any such notice, SCE will promptly give written notice to Investor of the revised estimate of the Target COD or COD, as applicable ("Revised Estimate"), and shall repeat this process as many times as applicable if the Revised Estimate(s) change(s)). SCE's notices shall include an estimate of the Total Actual Costs. Subject to Section 4.3 (Conditions to Closing of Option) hereof, Investor may exercise the Option by delivering written notice to SCE no earlier than the first notice delivered by SCE pursuant to clause (a) above, and no later than the later of (i) the COD and (ii) the date ten (10) Business Days after the last Revised Estimate. Such notice shall specify the amount of the Prepaid Rent payment Investor elects to make under the Transfer Capability Lease. If SCE has timely given Investor the required notices described in this paragraph, the Option will expire if Investor fails to exercise its Option by the COD.

Section 4.2.3 Closing of Option. The lease of Transfer Capability pursuant to the Transfer Capability Lease shall occur as soon as reasonably practical, but no earlier than COD and no later than sixty (60) days following Investor's valid exercise of the Option. SCE and Investor shall execute, acknowledge and deliver the Transfer Capability Lease and any and all other documents reasonably necessary to lease such Transfer Capability and otherwise carry out the terms and conditions of this DCA. Upon closing of the lease of the Transfer Capability pursuant to the Transfer Capability Lease, Investor shall pay to SCE the Prepaid Rent. Closing of the Option may be accomplished through use of an escrow arrangement as mutually agreed by the Parties, and, in the event that Investor's lenders require an escrow arrangement, upon whatever escrow terms are reasonably requested by such lenders.

Section 4.2.4 Responsibility for Financing and Securing Recovery of Prepaid Rent. Investor shall be responsible for obtaining its own financing for the Prepaid Rent, and SCE has no obligation to provide or guarantee financing to Investor if Investor is unable to secure any part of its financing. For the avoidance of doubt, Investor shall request, in its initial filings for Investor Regulatory Approvals, and SCE shall support, through timely intervention and active participation in any proceeding relating to or affecting Investor's rates, that FERC order that the full amount of Investor's Prepaid Rent be recoverable through its cost recovery methodology pursuant to Section 5.4 (Investor's Cost Recovery Methodology) hereof, and that any adjustment ordered by FERC to the amount of Total Actual Costs that may be recovered through transmission rates come from SCE's interest in the Subject Facilities.

Section 4.3 Conditions to Closing of Option. The Parties acknowledge and agree that the closing of the Option and the lease of Transfer Capability pursuant to the Transfer Capability Lease are expressly contingent upon and subject to the fulfillment of the following conditions on or prior to the closing of the Option:

Section 4.3.1 Receipt of Required SCE Regulatory Approvals. SCE shall have received all Required SCE Regulatory Approvals including, without limitation (a) a final, nonappealable order by the CPUC approving the Transfer Capability Lease under Section 851 of the California Public Utilities Code or otherwise, and (b) a final, nonappealable order by FERC approving this transaction under the Federal Power Act and SCE's rate methodologies to account for Investor's lease of Transfer Capability in the Subject Facilities, in each case, in form and substance acceptable to SCE, in SCE's sole discretion;

Section 4.3.2 Receipt of Required Investor Regulatory Approvals. Investor shall have received all Required Investor Regulatory Approvals including, without limitation, a final, nonappealable order by FERC approving Investor's rate methodologies for the recovery of costs associated with the Transfer Capability Lease, including any incentive rate treatment Investor may seek, in each case, in form and substance acceptable to Investor, in Investor's sole discretion, subject to the requirements of Sections 5.3 (Regulation of Investor's Rates) and 5.4 (Investor's Cost Recovery Methodology) hereof;

Section 4.3.3 Transfer of Operational Control to CAISO. CAISO shall have approved Investor becoming a PTO, and Investor shall have agreed to turn over to CAISO Operational Control of its Transfer Capability in the Subject Facilities no later than the effective date of the Lease; and

Section 4.3.4 Continued Effectiveness of ROW Documents. The United States Department of the Interior shall have granted the rights-of-way under the ROW Grant, Morongo shall have performed in all material respects its agreements and obligations contained in the ROW Agreement, and the ROW Documents shall remain in full force and effect.

Each Party shall provide such evidence of the fulfillment of the foregoing conditions as may reasonably be requested by the other Party.

ARTICLE V. REGULATORY APPROVALS

Section 5.1 SCE Regulatory Approvals. SCE shall be responsible for obtaining the Required SCE Regulatory Approvals and shall use commercially reasonable efforts to do so. Investor agrees to cooperate in good faith with and assist SCE in obtaining the Required SCE Regulatory Approvals. SCE shall diligently and timely (a) file an application to the CPUC for approval of the Transfer Capability Lease, (b) file a petition with FERC seeking a declaratory order approving its rate methodologies for the recovery of costs associated with the Project, or such other petition(s) as may be appropriate to obtain Required SCE Regulatory Approvals from FERC related to the Project, and (c) file a petition with FERC seeking a declaratory order approving this transaction under the Federal Power Act and SCE's rate methodologies to account for the Transfer Capability Lease.

Section 5.2 Investor Regulatory Approvals. Investor shall be responsible for obtaining the Required Investor Regulatory Approvals and shall use commercially reasonable efforts to do so. SCE agrees to cooperate in good faith with and assist Investor in obtaining the Required Investor Regulatory Approvals; provided, however, that SCE shall not be responsible to guarantee or financially support Investor's cost recovery. Investor shall diligently and timely (a) subject to Sections 5.3 (Regulation of Investor's Rates) and 5.4 (Investor's Cost Recovery Methodology) hereof, file a petition with FERC seeking a declaratory order approving its rate methodologies for the recovery of costs associated with the Transfer Capability Lease, including any incentive rate treatment Investor may seek, and (b) begin the process of becoming a PTO with CAISO.

Section 5.3 Regulation of Investor's Rates. Investor's Transfer Capability under the Transfer Capability Lease shall be provided for the benefit of and made available to CAISO Eligible Customers (or similarly situated customers of the successor System Operator in the event the CAISO is no longer the System Operator) at rates, terms and conditions deemed just and reasonable and not unduly discriminatory by FERC pursuant to Section 205 of the Federal Power Act.

Section 5.4 Investor's Cost Recovery Methodology. Investor shall seek, and SCE shall support, through timely intervention and active participation in any proceeding relating to or affecting Investor's rates, a cost recovery methodology from FERC that provides cost recovery to Investor limited to the recovery of the following transmission costs. For the avoidance of doubt, Investor shall be entitled to, and SCE shall support, rate recovery for capital costs that is not affected by any percentage reduction in its Transfer Capability associated with SCE's funding of renewals, replacements or upgrades to all or any portion of the Subject Facilities pursuant to the Transfer Capability Lease or otherwise.

Section 5.4.1 Operating Costs. Investor shall seek, and SCE shall support, through timely intervention and active participation in any proceeding relating to or affecting Investor's rates, recovery of its Share of O&M Costs incurred by Investor under the Transfer Capability Lease, and its ratable share of all other reasonably and prudently incurred costs for operation and maintenance of the Subject Facilities under the Transfer Capability Lease on an annual formulaic basis, including administrative and general activities, general and common plant, non-capitalized land lease costs (and any sales, use, and excise tax) and the Applicable Portion of Property Taxes directly attributable to Investor's Transfer Capability on the Subject Facilities as recorded in FERC accounts, including but not limited to the following accounts: 408.1, 560-573, 908, and 920-935 under the FERC Uniform System of Accounts.

Section 5.4.2 Capital Requirements. Investor shall seek, and SCE shall support, through timely intervention and active participation in any proceeding relating to or affecting Investor's rates, recovery for all other costs associated with the Transfer Capability Lease at a fixed rate that provides for recovery of Investor's costs but does not exceed the rate SCE could recover at the time of COD if SCE held Investor's Transfer Capability (the "SCE Representative Rate"). This fixed rate is intended to cover all costs associated with the Transfer Capability Lease (other than the operating costs described in Section 5.4.1 (Operating Costs) hereof) including Prepaid Rent (including capitalized property taxes) and other costs of Transfer Capability, debt service, capitalized interest, liquidity reserves, taxes (excluding the Applicable Portion of Property Taxes and the sales, use, or excise taxes which are included in Investor's Share of O&M Costs and the operating costs addressed by Section 5.4.1 (Operating Costs) hereof), charitable contributions, and any and all other costs.

(a) For purposes of determining the SCE Representative Rate, the Parties agree to use the model attached hereto as Exhibit C. The model calculates a theoretical revenue requirement for the Useful Life of the Project as if SCE held Investor's Transfer Capability, discounts that revenue requirement to a thirty (30) year period, and calculates an annual levelized SCE Representative Rate over that thirty (30) year period.

(1) The example model attached hereto as Exhibit C calculates the SCE Representative Rate using the following inputs: (a) SCE's capital structure fixed at 50% equity and 50% debt, (b) authorized return on equity for SCE's FERC-jurisdictional transmission assets of 10.43%, (c) SCE's state income tax rate of 8.84% and federal income tax rate of 35.00%, (d) SCE's estimated debt rate, which is the average of a five-day average of each of Moody's A 30-year Utility Bond Index and Moody's Baa 30-year Utility Bond Index equal to 4.14%, (e) Costs of Transfer Capability equal to $414,100,000 and (f) AFUDC equal to $0.

(2) The final model used to calculate the SCE Representative Rate shall use the following inputs: (a) SCE's capital structure fixed at 50% equity and 50% debt, (b) SCE's authorized return on equity for its FERC-jurisdictional transmission assets as of the effective date of the Transfer Capability Lease, (c) SCE's state income tax rate and federal income tax rate as of the effective

date of the Transfer Capability Lease, (d) SCE's estimated debt rate, which is the average of the five-day average of each of Moody's A 30-year Utility Bond Index and Moody's Baa 30-year Utility Bond Index as set forth in the Bloomberg LLC system, mnemonics MMODUA and MOODUBAA as of the effective date of the Transfer Capability Lease, (e) the actual Costs of Transfer Capability, and (f) the portion of the actual Costs of Transfer Capability that is SCE's actual AFUDC, if any. After such calculation, these inputs shall not be reset at any time in determining the SCE Representative Rate.

(b) At the time Investor files its initial application seeking FERC approval of its annual fixed rate methodology for recovery of the costs described in this Section 5.4.2, Investor shall demonstrate to FERC that its proposed rate methodology (including any of the adjustments described under Section 8.3 of the Transfer Capability Lease) results in an annual fixed rate that does not exceed the SCE Representative Rate (which also shall include any adjustments described under Section 8.3).

(c) At such time as Investor consummates the debt financing transaction for the Lease, and at such time as Investor submits its compliance filing to FERC showing its actual rates based on the FERC-approved annual fixed rate methodology, Investor shall demonstrate to FERC that its FERC-approved annual fixed rate for recovery of the costs described in this Section 5.4.2 (excluding any of the adjustments described under Section 8.3 of the Transfer Capability Lease) does not exceed the SCE Representative Rate (which does not include any of the adjustments described under Section 8.3 of the Transfer Capability Lease).

(d) In the event Investor is not able to demonstrate to the FERC that its fixed annual rate (excluding any of the adjustments described under Section 8.3 of the Transfer Capability Lease) does not exceed the SCE Representative Rate (which also does not include any of the adjustments described under Section 8.3), then Investor agrees to limit or cap its fixed annual rate (excluding any of the adjustments described under Section 8.3) to equal the SCE Representative Rate (which also does not include any of the adjustments described under Section 8.3).

Section 5.4.3 Waiver of Section 205/206 Rights. Except to the extent a change in law, rule, or regulation results in any new taxes, income taxes, Property Taxes, fees or other charges being levied by a Governmental Authority, to the fullest extent permitted by applicable law, Investor, for itself and its successors and assigns, shall waive any rights it can or may have, now or in the future, whether under Sections 205 and/or 206 of the Federal Power Act or otherwise, to seek to obtain from FERC by any means, directly or indirectly (through complaint, investigation or otherwise), and Investor covenants and agrees not at any time to seek to so obtain, an order from FERC changing the FERC-approved fixed rate for recovery of the costs described in Section 5.4.2 (Capital Requirements) hereof. For the avoidance of doubt, to the extent a change in law, rule, or regulation results in any new taxes, income taxes, property taxes, fees or other charges being levied by a Governmental Authority, Investor may seek approval for inclusion in its rates an allowance to recover any such new taxes, income taxes, Property Taxes, fees or other charges. SCE shall fully support, through timely intervention and active participation in any proceeding relating to or affecting Investor's rates, Investor's recovery and implementation of rates conforming to the provisions of this DCA in accordance with Section 205 of the Federal Power Act and orders issued by FERC thereunder in order that Investor may acquire, finance, operate and maintain its leasehold interest in the Subject Facilities. SCE acknowledges that among other things, Investor will seek recovery of and SCE will support Investor as a PTO seeking to recover from CAISO Eligible Customers in its transmission revenue requirement for the Subject Facilities (a) all prudently incurred pre-commercial operations costs in current rates, (b) all costs of abandoned facilities, provided such abandonment is due to factors beyond Investor's control, and (c) all capital requirements as described in Section 5.4.2 (Capital Requirements) hereof. SCE's support shall include providing FERC with assurances that all costs sought to be recovered by Investor through its rates that were originally incurred by SCE were prudently incurred.

ARTICLE VI. MANAGEMENT OVERSIGHT AND COMMITTEE STRUCTURE

Section 6.1 Meetings of the Parties. The Parties shall hold regularly scheduled meetings (no less frequently than quarterly prior to COD) for the purpose of reviewing each Party's progress in its development, design, permitting, engineering, procurement, construction, commissioning, financing, operating, and maintenance activities for the Project. Either Party may request a special meeting at any time. Reasonable and sufficient notice of each meeting shall be given to each Party in order to allow full participation.

Section 6.2 Sharing Information.

Section 6.2.1 SCE Information. Upon reasonable notice and during regular business hours, and subject to Investor entering into customary non-disclosure agreements, SCE shall allow Investor access to the Project site and to SCE’s Project-related personnel, contracts, books and records, and other documents and data of SCE relating to the Project as may be reasonably requested by Investor, including but not limited to:

(a) Budgeting and costing information to ensure that Investor is apprised of the projected costs for the Project and that such costs are allocated to appropriate portions of the Project and that SCE keeps its accounts and provides sufficient information to Investor to allow Investor to review those allocations and accounts on an on-going basis;

(b) Permitting information; and

(c) Plans, specifications, design, or maps of the Project.

Section 6.2.2 Investor Information. Upon reasonable notice, Investor shall provide information related to the Subject Facilities as may be reasonably requested by SCE.

Section 6.3 Final Decisions. Notwithstanding anything to the contrary in this Article VI (Management Oversight and Committee Structure), SCE shall be solely responsible for and shall make all final decisions with respect to the development, design, permitting, engineering, procurement, construction, and commissioning of the Project; provided, however, that SCE will not make any such decision that would prohibit Investor from exercising and closing the Option. Any disputes regarding whether or not SCE has complied with its obligations under this DCA (including its obligations under Section 3.2 (Performance Standards) hereof) shall be resolved by the dispute resolution procedures under Article X (Dispute Resolution).

ARTICLE VII. FORCE MAJEURE

Section 7.1 Force Majeure. Notwithstanding anything in this DCA to the contrary, if a Party's performance is impacted by Force Majeure, the affected Party shall be excused from performing its affected obligations under this DCA (other than the obligation to make payments with respect to obligations arising prior to the event of Force Majeure) and shall not be liable for damages or other liabilities due to its failure to perform, during any period (but no longer than 6 months) that such Party is unable to perform due to an event of Force Majeure; provided, however, that the Party declaring an event of Force Majeure shall: (a) act expeditiously to resume performance; (b) exercise all commercially reasonable efforts to mitigate or limit damages to the other Party; and (c) fulfill the requirements set forth in Section 7.2 (Notification) hereof.

Section 7.2 Notification. A Party unable to perform under this DCA due to an event of Force Majeure shall: (a) provide prompt written notice of such event of Force Majeure to the other Party, which shall include an estimate of the expected duration of the Party's inability to perform due to the event of Force Majeure; and (b) provide prompt notice to the other Party when performance resumes.

ARTICLE VIII. WITHDRAWAL

Section 8.1 Withdrawal. Prior to the COD, SCE shall have the right to withdraw from and terminate the Project including this DCA immediately and be under no obligation to pursue additional development activities if: (a) any of the applications for the Required SCE Regulatory Approvals is denied, or is approved with conditions that are unacceptable to SCE or otherwise materially inconsistent with the Project as described herein; (b) the receipt of any Required SCE Regulatory Approval is delayed such that SCE will not be able to reasonably complete construction activities until twelve months or more after the Target COD; (c) FERC issues a final and binding order that would preclude SCE from recovering, in SCE's reasonable estimation, a return of and on any portion of its investment in the Project; or (d) it is no longer reasonably feasible for SCE to continue development, design, permitting, engineering, procurement and construction activities for the Project.

Section 8.2 Notice. SCE must provide notice to Investor within sixty (60) days of its determination that it is withdrawing pursuant to this Article VIII (Withdrawal).

Section 8.3 Reinstatement. If at any time within five (5) years of the Effective Date, if the ROW Documents remain in effect and SCE resumes development of the Project after it has withdrawn from the Project and terminated this DCA under Section 8.1 (Withdrawal) ("Project Recommencement"), then such termination shall no longer be effective and this DCA shall be automatically reinstated with reasonable extensions to the dated terms of this DCA. The effect of such Project Recommencement and reinstatement of this DCA is intended to provide Investor with a renewed opportunity to hold the Option to lease Transfer Capability in the Project in the manner provided for in this DCA.

ARTICLE IX. EVENTS OF DEFAULT; REMEDIES

Section 9.1 Events of Default. The occurrence of any one of the following shall constitute an "Event of Default":

(a) A Party shall fail to make payments for amounts due under this DCA within thirty (30) days after notice that such payment is past due;

(b) A Party shall fail to comply with any other material provision of this DCA (other than failures covered by subparagraph (a) above), and any such failure shall continue uncured for thirty (30) days after notice thereof; provided, however, that if such failure is not capable of being cured within such period of thirty (30) days with the exercise of reasonable diligence, then such cure period shall be extended for an additional reasonable period of time (but not exceeding ninety (90) days) so long as the defaulting Party is exercising commercially reasonable efforts to cure such failure;

(c) Any representation made by a Party hereunder shall fail to be true in any material respect at the time such representation is given and such failure shall not be cured within thirty (30) days after notice thereof by a non-defaulting Party;

(d) SCE shall fail to comply with any material provision of the ROW Documents, subject to the applicable cure rights expressly provided therein; or

(e) With respect to Investor, the ROW Grant shall fail to be in full force and effect (other than by reason of SCE's failure to comply with any material provision of the ROW Documents), or Morongo shall fail to comply with any material provision of the ROW Agreement, in each case subject to the applicable cure rights expressly provided therein.

Section 9.2 Limitation on Damages. No Party shall be liable to the other Party under this DCA for consequential, incidental, punitive, exemplary or indirect damages or other business interruption damages, by statute, in tort or contract, under any indemnity provision or otherwise. The provisions of this Section 9.2 shall not be construed to relieve any insurer of its obligation to pay any insurance proceeds in accordance with the terms and conditions of valid and enforceable insurance policies. Nothing contained in this DCA, the Transfer Capability Lease or any other document or agreement related hereto shall be construed to waive, limit or restrict, in any way, any of Morongo's or SCE's rights, remedies or defenses under or emanating from the ROW Documents.

Section 9.3 Remedies. Subject to Article X (Dispute Resolution), if an Event of Default occurs and is continuing, the non-defaulting Parties shall have the right to pursue all remedies available at law or in equity, including without limitation, the right to institute an action, suit or proceeding in equity for specific performance of the obligations under this DCA.

ARTICLE X. DISPUTE RESOLUTION

Section 10.1 Intent of the Parties. The sole procedure to resolve any claim arising out of or relating to this DCA or any related agreement is the dispute resolution procedure set forth in this Article X (Dispute Resolution); provided, however, that either Party may seek a preliminary injunction or other provisional judicial remedy if such action is necessary to prevent irreparable harm or preserve the status quo, in which case both Parties nonetheless will continue to pursue resolution of the dispute by means of this procedure and nothing in this Section 10.1 shall restrict the rights of any party to file a complaint with the FERC under relevant provisions of the Federal Power Act.

Section 10.2 Management Negotiations. The Parties will attempt in good faith to resolve any controversy or claim arising out of or relating to this DCA or any related agreements by prompt negotiations between each Party's authorized representatives. If the matter is not resolved thereby, either Party's authorized representative may request in writing that the matter be referred to the designated senior officers of their respective companies that have corporate authority to settle the dispute. Within five (5) Business Days after such referral date (the "Referral Date"), each Party shall provide one another Notice confirming the referral and identifying the name and title of the senior officer who will represent such Party. Within five (5) Business Days after such Referral Date, the senior officers shall establish a mutually acceptable location and date to meet which shall not be greater than thirty (30) days after such Referral Date. After the initial meeting date, the senior officers shall meet, as often as they reasonably deem necessary, to exchange relevant information and to attempt to resolve the dispute. All communication and writing exchanged between the Parties in connection with these negotiations shall be confidential and shall not be used or referred to in any subsequent binding adjudicatory process between the Parties. If the matter is not resolved within forty-five (45) days of such Referral Date, or if either Party refuses or does not meet within the thirty (30)

Business Day period specified above, either Party may initiate arbitration of the controversy or claim by providing notice of a demand for binding arbitration before a single, neutral arbitrator ("Arbitrator") at any time thereafter.

Section 10.3 Arbitration.

Section 10.3.1 Arbitrator. The Parties will cooperate with one another in selecting the Arbitrator from the panel of neutrals from Judicial Arbitration and Mediation Services, Inc. ("JAMS"), its successor, an any other mutually acceptable non-JAMS Arbitrator sixty (60) days after notice of the demand for arbitration and shall further cooperate in scheduling the arbitration to commence no later than one hundred eighty (180) days from the date of notice of the demand. If, notwithstanding their good faith efforts, the Parties are unable to agree upon a mutually-acceptable Arbitrator in accordance with the preceding sentence, the Arbitrator shall be appointed as provided for in California Code of Civil Procedure Section 1281.6. To be qualified as an Arbitrator, each candidate must be a retired judge of a trial court of any state or federal court, or retired justice of any appellate or supreme court. Upon notice of a Party's demand for binding arbitration, such dispute submitted to arbitration, including the determination of the scope or applicability of this DCA to arbitrate, shall be determined by binding arbitration before the Arbitrator, in accordance with the laws of the State of California, without regard to principles of conflicts of laws.

Section 10.3.2 Rules and Procedures. Except as provided for herein, the arbitration shall be conducted by the Arbitrator in accordance with the rules and procedures for arbitration of complex business disputes for the organization with which the Arbitrator is associated. Absent the existence of such rules and procedures, the arbitration shall be conducted in accordance with the California Arbitration Act, California Code of Civil Procedure Section 1280 et seq. and California procedural law (including the Code of Civil Procedure, Civil Code, Evidence Code and Rules of Court, but excluding local rules). Notwithstanding the rules and procedures that would otherwise apply to the arbitration, and unless the Parties agree to a different arrangement, the place of the arbitration shall be in Los Angeles County, California.

Section 10.3.3 Discovery. Notwithstanding the rules and procedures that would otherwise apply to the arbitration, and unless the Parties agree to a different arrangement, discovery will be limited as follows:

(a) Before discovery commences, the Parties shall exchange an initial disclosure of all documents and percipient witnesses which they intend to rely upon or use at any arbitration proceeding (except for documents and witnesses to be used solely for impeachment);

(b) The initial disclosure will occur within thirty (30) days after the initial conference with the Arbitrator or at such time as the Arbitrator may order;

(c) Discovery may commence at any time after the Parties' initial disclosure;

(d) The Parties will not be permitted to propound any interrogatories or requests for admissions;

(e) Discovery will be limited to twenty-five (25) document requests (with no subparts), three (3) lay witness depositions, and three (3) expert witness depositions (unless the Arbitrator holds otherwise following a showing by the Party seeking the additional documents or depositions that the documents or depositions are critical for a fair resolution of the dispute or that a Party has improperly withheld documents);

(f) Each Party is allowed a maximum of three (3) expert witnesses, excluding rebuttal experts;

(g) Within sixty (60) days after the initial disclosure, or at such other time as the Arbitrator may order, the Parties shall exchange a list of all experts upon which they intend to rely at the arbitration proceeding;

(h) Within thirty (30) days after the initial expert disclosure, the Parties may designate a maximum of two (2) rebuttal experts;

(i) Unless the Parties agree otherwise, all direct testimony will be in form of affidavits or declarations under penalty of perjury; and

(j) Each Party shall make available for cross examination at the arbitration hearing its witnesses whose direct testimony has been so submitted.

Section 10.3.4 Court Reporter. Unless otherwise agreed to by the Parties, all proceedings before the Arbitrator shall be reported and transcribed by a certified court reporter, with each Party to the dispute bearing an equal share of the court reporter's fees.

Section 10.3.5 Arbitration Decision. At the conclusion of the arbitration hearing, the Arbitrator shall prepare in writing and provide to the Parties a decision setting forth factual findings, legal analysis, and the reasons on which the Arbitrator's decision is based. The Arbitrator shall also have the authority to resolve claims or issues in advance of the arbitration hearing that would be appropriate for a California superior court judge to resolve in advance of trial. The Arbitrator shall not have the power to commit errors of law or fact, or to commit any abuse of discretion, that would constitute reversible error had the decision been rendered by a California superior court. The Arbitrator's decision may be vacated or corrected on appeal to a California court of competent jurisdiction for such error. The Arbitrator shall have no power to make an award or impose a remedy that is inconsistent with this Section 10.3. However, subject to this Section 10.3, the Arbitrator shall have the authority to grant any form of equitable or legal relief a party might recover in a court action. Judgment on the award may be entered in any court having jurisdiction.

Section 10.3.6 Prevailing Party. The Arbitrator shall, in any award, allocate all of the costs of the binding arbitration (other than each Party's individual attorneys' fees and costs related to the Party's participation in the arbitration, which fees and costs shall be borne by such Party), including the fees of the Arbitrator and any expert witnesses, against the Party who did not prevail. Until such award is made, however, the Parties shall share equally in paying the costs of the arbitration.

Section 10.4 Enforcement of Award. By execution and delivery of this DCA, each Party hereby (a) accepts and consents to the use of binding arbitration pursuant to the procedures described in this Article X (Dispute Resolution), and, solely for purposes of the enforcement of an arbitral award under this Section 10.4, to the jurisdiction of any court of competent jurisdiction, for itself and in respect of its property, and (b) waives, solely for purposes of the enforcement of an arbitral award under this Section 10.4, in respect of both itself and its property, all defenses it may have as to or based on jurisdiction, improper venue or forum non conveniens. Each Party hereby irrevocably consents to the service of process or other papers by the use of any of the methods and to the addresses set out for the giving of notices in Section 12.1 (Notices) hereof. Nothing herein shall affect the right of each Party to serve such process or papers in any other manner permitted by law.

Section 10.5 Performance during Arbitration. While resolution of any dispute is pending, each Party shall continue to perform its obligations hereunder (unless such Party is otherwise entitled to suspend its performance hereunder or terminate this DCA in accordance with the terms hereof), and no Party shall refer or attempt to refer the matter in dispute to a court or other tribunal in any jurisdiction, except as provided in this Article X (Dispute Resolution).

ARTICLE XI. REPRESENTATIONS AND WARRANTIES

Section 11.1 SCE. SCE represents and warrants to Investor as follows:

Section 11.1.1 Organization and Existence. SCE is a duly organized and validly existing corporation in good standing under the laws of the State of California and is qualified to transact business in all jurisdictions where the ownership of its properties or its operations require such qualification, except where the failure to so qualify would not have a material adverse effect on its financial condition, its ability to own its properties or transact its business, or to carry out the transactions and activities contemplated hereby.

Section 11.1.2 Execution, Delivery and Enforceability. SCE has full corporate power and authority to carry on its business as now conducted, enter into, and to carry out its obligations under this DCA. The execution, delivery and performance by SCE of this DCA, and the consummation of the transactions and activities contemplated under this DCA, have been duly authorized by all necessary corporate action required on the part of SCE. This DCA has been duly and validly executed and delivered by SCE and constitutes the valid and legally binding obligations of SCE, enforceable against SCE in accordance with its terms, except as such enforceability may be limited by bankruptcy, insolvency, reorganization, moratorium or other similar laws of general application relating to or affecting the enforcement of creditors' rights and by general equitable principles.

Section 11.1.3 No Violation. Subject to the receipt of all Required SCE Regulatory Approvals, none of the execution and delivery of this DCA, the compliance with any provision hereof, nor the consummation of the transactions and activities contemplated hereby will: (a) violate or conflict with, or result in a breach or default under, any provisions of the Articles of Incorporation or Bylaws of SCE; or (b) violate or conflict with, or result in a breach or default under, any material applicable law or regulation of any Governmental Authority or any injunction of any federal or state court.

Section 11.1.4 Project. SCE has provided to Investor a true and complete list of all permits relating to the Project which have been obtained through the date of this DCA and all such permits are in full force and effect. SCE has a reasonable basis to believe that it will timely obtain the requisite financing needed for the Project. The useful life of the Subject Facilities, in SCE's good faith best estimate will exceed thirty (30) years.

Section 11.2 Investor. Investor represents and warrants to SCE as follows:

Section 11.2.1 Organization and Existence. Investor is a duly organized and validly existing limited liability company in good standing under the laws of the State of Delaware and is qualified to transact business in all jurisdictions where the ownership of its properties or its operations require such qualification, except where the failure to so qualify would not have a material adverse effect on its financial condition, its ability to own its properties or transact its business, or to carry out the transactions and activities contemplated hereby.

Section 11.2.2 Execution, Delivery and Enforceability. Investor has full power and authority to carry out its obligations under this DCA. The execution, delivery and performance by Investor of this DCA, and the consummation of the transactions and activities contemplated under this DCA, have been duly authorized by all necessary action required on the part of Investor. This DCA has been duly and validly executed and delivered by Investor and constitutes the valid and legally binding obligations of Investor, enforceable against Investor in accordance with its terms, except as such enforceability may be limited by bankruptcy, insolvency, reorganization, moratorium or other similar laws of general application relating to or affecting the enforcement of creditors' rights and by general equitable principles.

Section 11.2.3 No Violation. Subject to the receipt of all Required Investor Regulatory Approvals, none of the execution and delivery of this DCA, the compliance with any provision hereof, nor the consummation of the transactions and activities contemplated hereby will: (a) violate or conflict with, or result in a breach or default under, any provisions of the certificate of formation or operating agreement of Investor; or (b) violate or conflict with, or result in a breach or default under, any material applicable law or regulation of any Governmental Authority or any injunction of any federal or state court.

ARTICLE XII. MISCELLANEOUS

Section 12.1 Notices. Unless otherwise specified herein, all notices shall be in writing and delivered by hand, overnight courier or facsimile (provided a copy is also sent by overnight courier) to the applicable addresses below. Notice shall be effective in case of delivery by hand or facsimile on the next Business Day after it is sent, or in the case of delivery by overnight courier, on the later of the next Business Day after it is sent or on the first day after it is sent on which the overnight courier guarantees delivery. A Party may change its address for notices by providing notice of the same in accordance with this Section 12.1.

If to SCE:
Southern California Edison Company
2244 Walnut Grove Avenue
Rosemead, CA 91770
Attention: Treasurer
Fax: (626) 302-4510

With a copy to:
Southern California Edison Company
2244 Walnut Grove Avenue
Rosemead, CA 91770
Attention: General Counsel
Fax: (626) 302-3720

If to Investor:
Morongo Transmission LLC
c/o Morongo Band of Mission Indians
12700 Pumarra Rd.
Banning, CA 92220
Attention: Roger Meyer, CEO
Fax: (951) 849-5108

With copies to:

Forman & Associates
Attorneys at Law
4340 Redwood Highway,
Suite E352
San Rafael, CA 94903
Attention: George Forman
Fax: (415) 491-2313

and

Whalen LLP
19000 MacArthur Boulevard, Suite 600
Irvine, CA 92612
Attention: Michael Whalen
Fax: (714) 408-7446

Section 12.2 Assignment.

Section 12.2.1 General. Neither Party shall assign this DCA, or its rights or obligations hereunder, without the prior written consent of the other Party, which may be granted or withheld in its sole discretion; provided, however, that, no such consent shall be required for (a) a collateral assignment of, or creation of a security interest in, this DCA in connection with any financing or other financial arrangements, or (b) an assignment in connection with the merger of SCE with, or the acquisition of substantially all of the transmission assets of SCE by, an entity with an equal or greater credit rating and with the legal authority and operational ability to satisfy the obligations of SCE. Any other change of control of a Party (or of any parent entity holding directly or indirectly at least fifty percent of the equity interest in such Party) whether voluntary or by operation of law shall be deemed an assignment hereunder except in the case where the resulting controlling person is an entity that holds an ownership interest in Investor as of the Effective Date. In addition, any transfer of an ownership interest in Investor (other than a transfer to an entity that holds an ownership interest in Investor as of the Effective Date) shall be deemed an assignment hereunder. Any assignment in violation of this Section 12.2 shall be null and void.

Section 12.2.2 Right of First Refusal. Except in connection with (a) a collateral assignment under clause (a) of Section 12.2.1 (General) hereof or (b) any foreclosure sale or deed in lieu of foreclosure in connection with the exercise of remedies under such collateral assignment, SCE shall have the right of first refusal with respect to any proposed assignment by Investor of all or any portion of its interest in this DCA or the Project (including any deemed assignment resulting from any change of control of a Party or transfer of an ownership interest in Investor pursuant to Section 12.2.1 (General) hereof, excluding, in either case, any assignment or transfer to an entity that holds an ownership interest in Investor as of the Effective Date). In the event Investor receives a bona fide offer from an unaffiliated third party to purchase all or any portion of the interest of Investor in this DCA (or the Project) that Investor desires to accept, Investor shall provide SCE with a copy of the bona fide third party purchase offer within five (5) Business Days following such receipt. For a period of ninety (90) days following SCE's receipt of the bona fide third party purchase offer, SCE shall have the right to purchase such interest as set forth in the offer on the same terms and conditions set forth in such offer and to conduct due diligence regarding the contemplated purchase. In the event that SCE elects to exercise its right, SCE and Investor shall close the purchase and sale of the interest in this DCA (and the

Project) upon the terms and conditions contained in the offer. In the event that SCE elects not to exercise its right and subject to SCE's prior written consent under Section 12.2.1 (General) hereof, Investor shall be free to sell such interest to the third party that made the offer on terms and conditions no less favorable to Investor than those contained in the offer. In the event that such sale is not consummated within twenty-four (24) months following SCE's failure to exercise this right of first refusal, then SCE's right of first refusal shall be revived with respect to such sale. In the event that there is a material revision in any offer in favor of any prospective purchaser, then SCE's right of first refusal shall again apply so that SCE again has the right of first refusal to purchase the interest in this DCA (and the Project) on the revised terms.

Section 12.3 Confidentiality. During the term of this DCA and for a period of three (3) years after the expiration or termination of this DCA, the Parties shall keep confidential any confidential information relating to the Project obtained from the other Parties, and shall refrain from using, publishing or revealing such confidential information without the prior written consent of the Party whose confidential information the disclosing Party is seeking to disclose, unless: (a) compelled to disclose such document or information to a securities exchange or by judicial, regulatory or administrative process or other provisions of law; (b) such document or information is generally available to the public; (c) such document or information was available to the disclosing Party on a non-confidential basis; (d) such document or information was available to the disclosing Party on a non-confidential basis from a third party; provided, however, that the disclosing Party does not know, and, by reasonable effort, could not know that such third party is prohibited from transmitting the document or information to the receiving Party by a contractual, legal or fiduciary obligation; or (e) such document or information is necessary to support a rate case or other regulatory filing with a Governmental Authority; provided, however, that, the Party disclosing such document or information must make reasonable efforts to maintain confidentiality with respect to any proprietary information.

Section 12.4 Public Relations. The Parties will cooperate in good faith with each other and, to the extent reasonable, seek mutual approval with respect to any public announcements regarding the Project.

Section 12.5 Governing Law. This DCA and the obligations hereunder shall be governed by the applicable Laws of the State of California, without regard to principles of conflicts of law.

Section 12.6 No Amendments or Modifications. This DCA shall not be amended, modified, terminated, discharged or supplemented, nor any provision hereof waived, unless mutually agreed to in writing by all of the Parties. If and to the extent that the CAISO Agreements are amended or modified such that a Party or the Parties can no longer comply with the terms of this DCA, the Parties shall negotiate in good faith to amend or modify this DCA to effectuate the same intent and essential purpose of this DCA as of the Effective Date in light of the CAISO Agreements amendment or modification, and neither Party shall unreasonably refuse to agree to any such necessary modification that does not have an adverse impact on the Party to which a request for modification is made.

Section 12.7 Delay and Waiver. Except as otherwise provided in this DCA, no delay or omission to exercise any right, power or remedy accruing to the respective Parties hereto upon any breach or default of any other Party under this DCA shall impair any such right, power or remedy, nor shall it be construed to be a waiver of any such similar breach or default thereafter occurring, nor shall any waiver of any single breach or default be deemed a waiver of any other breach or default theretofore or thereafter occurring. Any waiver, permit, consent or approval of any kind or character of any breach or default under this DCA, or any waiver of any provision or condition of this DCA, must be in writing and shall be effective only to the extent specifically set forth in such writing.

Section 12.8 Entirety; Conflicts. This DCA, together with its exhibits and the Transfer Capability Lease, constitute the entire agreement between the Parties hereto. There are no prior or contemporaneous agreements or representations affecting the same subject matter other than those herein expressed.

Section 12.9 Relationship of the Parties. Except as otherwise set forth herein, this DCA shall not make any of the Parties partners or joint venturers one with the other, nor make any the agent of the others. Except as otherwise explicitly set forth herein, no Party shall have any right, power or authority to enter into any agreement or undertaking for, or act on behalf of, or to act as or be an agent or representative of, or to otherwise bind, the other Party. Notwithstanding anything to the contrary, no fiduciary duty or fiduciary relationship shall exist between the Parties.

Section 12.10 Good Faith. In carrying out its obligations and duties under this DCA, each Party shall have an implied obligation of good faith.

Section 12.11 Successors and Assigns. This DCA shall inure to the benefit of, and be binding upon, the Parties hereto and their respective successors and permitted assigns.

Section 12.12 Third Parties. This DCA is intended solely for the benefit of the Parties. Nothing in this DCA shall be construed to create any duty or liability to, or standard of care with reference to, any Person other than the Parties.

Section 12.13 Headings. The headings contained in this DCA are solely for the convenience of the Parties and should not be used or relied upon in any manner in the construction or interpretation of this DCA.

Section 12.14 Counterparts. This DCA may be executed in one or more counterparts, each of which shall be deemed an original.

Section 12.15 Time is of the Essence. Each of the Parties acknowledges that timely achievement of commercial operation of the Project is essential, and therefore time is of the essence in performing all obligations set forth herein.

Section 12.16 No Personal Liability. Each action or claim of any Party arising under or relating to this DCA shall be made only against the other Party as a corporation or limited liability company, and any liability relating thereto shall be enforceable only against the assets of such Party. No Party shall seek to impose any liability relating to, or arising from, this DCA against any shareholder, manager, member, employee, officer or director of the other Party. Notwithstanding anything in Section 12.12 (Third Parties) hereof or elsewhere in this DCA, each of such persons is an intended beneficiary of the mutual promises set forth in this section and shall be entitled to enforce the obligations of this section.

IN WITNESS WHEREOF, the Parties have signed this Development and Coordination Agreement as of the Effective Date.

SCE:

Southern California Edison Company, a California corporation

By: ______________________________
Name: Ronald Litzinger
Title: President

LESSEE:

Morongo Transmission LLC, a Delaware limited liability company

By: ______________________________
Name: Robert Martin
Title: Chairman

EXHIBIT A

THE PROJECT AND SUBJECT FACILITIES

"Project" means the West of Devers Upgrade Project, which consists of the tear down and rebuild of four existing 220 kV transmission lines, covering approximately 48 corridor miles, with new 220 kV transmission lines between the existing Devers Substation (located near Palm Springs) and El Casco Substation (located in Western Riverside County), Vista Substation (located in Grand Terrace), and San Bernardino Substation (located in San Bernardino), which transmission lines will replace existing 220 kV transmission lines that cross the Reservation. The Project includes upgrades to equipment in the Devers, El Casco, Vista, and San Bernardino substations, as well as installation of telecommunication facilities. Portions of the new transmission lines may consist of double circuit 220kV transmission lines, and portions may consist of four single-circuit 220 kV transmission lines.

"Subject Facilities" means the portion of the West of Devers Upgrade Project consisting of the newly constructed 220 kV transmission lines that will operate as network transmission facilities under the Operational Control of the CAISO, and that are eligible for cost recovery under the CAISO's Transmission Access Charge. The Subject Facilities do not include any switchyard or substation facilities, subtransmission or distribution lines or facilities, telecommunications facilities, or the costs of removing existing facilities. Portions of the new transmission lines may consist of double circuit 220kV transmission lines, and portions may consist of four single-circuit 220 kV transmission lines.

Exhibit B

Form of Transfer Capability Lease

EXHIBIT C

MODEL FOR SCE REPRESENTATIVE RATE

EXHIBIT B

to

Development and Coordination Agreement

FORM OF TRANSFER CAPABILITY LEASE

TRANSFER CAPABILITY LEASE
BY AND BETWEEN
SOUTHERN CALIFORNIA EDISON COMPANY
AND
MORONGO TRANSMISSION LLC

DATED AS OF *[Note to form: insert date of execution]*

WEST OF DEVERS UPGRADE SUBJECT FACILITIES

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TRANSFER CAPABILITY LEASE

This TRANSFER CAPABILITY LEASE (this "Lease") is made and entered into as of *[Note to form: insert date of execution]* (the "Effective Date"), by and between Southern California Edison Company, a California corporation ("SCE"), and Morongo Transmission LLC, a Delaware limited liability company (the "Lessee"). Each of SCE and Lessee shall be referred to herein individually as a "Party" and collectively as the "Parties."

RECITALS

A. SCE has been developing a transmission project known as the West of Devers Upgrade Project in its service territory (as more fully defined herein, the "Project"), which includes approximately 48 corridor miles of new 220kV transmission lines (as more fully defined herein, the "Subject Facilities").

B. On *[Note to form: insert date of ROW Grant]*, the Morongo Band of Mission Indians ("Morongo"), a federally-recognized Indian tribe exercising jurisdiction over lands within the exterior boundaries of the Morongo Indian Reservation ("Reservation"), (a) has consented to a Grant pursuant to 25 U.S.C. Section 323 of rights-of-way for SCE transmission facilities crossing the Reservation (as more fully described herein, "ROW Grant"), including the Subject Facilities, and (b) has entered into an Agreement Related to the Grant of Easements and Rights-of-Way for Electric Transmission Lines and Appurtenant Fiber-Optic Telecommunications Lines and Access Roads on and Across Lands of the Morongo Indian Reservation with SCE (the "ROW Agreement").

C. Lessee is owned by Morongo and Coachella Partners LLC, and as a condition of Morongo agreeing to consent to the ROW Grant and enter into the ROW Agreement, Morongo has required that SCE and Lessee enter into a Development and Coordination Agreement (the "DCA") dated November __, 2012 pursuant to which SCE would develop, design, permit, engineer, procure, construct and own the Subject Facilities, and Lessee has an option (the "Option") to lease a portion of the Transfer Capability (as defined below) in the Subject Facilities.

D. Pursuant to the CAISO Agreements (as defined below), CAISO assumed Operational Control (as defined below) of the Project upon its completion.

E. On [*Note to form: insert date of exercise]*, Lessee notified SCE that Lessee had exercised the Option. On the Effective Date, Lessee and SCE closed the Option by, among other things, executing this Lease.

E. The Parties desire to enter into this Lease to, among other things, set forth the terms pursuant to which Lessee will lease from SCE a portion of the Transfer Capability in the Subject Facilities, all as more particularly set forth herein.

NOW THEREFORE, the Parties agree as follows:

ARTICLE I. DEFINITIONS; RULES OF INTERPRETATION

Section 1.1 Definitions. As used in this Lease, the following terms shall have the following meanings unless otherwise stated or the context otherwise requires:

"Additional Rent" has the meaning set forth in Section 4.1.2.

"Affiliate" means, with respect to any Party, a Person that controls, is controlled by, or is under common control with such Party. For this purpose, control means the ownership of more than fifty percent (50%) of the equity ownership or voting interest of any Person.

"AFUDC" refers to an Allowance for Funds Used During Construction, recognizing the cost to SCE of financing the development, design, permitting, engineering, procurement, and construction of the Subject Facilities. AFUDC does not apply to CWIP in Ratebase.

"Applicable Portion of Property Taxes" means, for any period after the COD, (a) if the Property Taxes on the Subject Facilities are assessed against SCE and no Property Taxes are assessed on the Lessee Transfer Capability against Lessee, the aggregate amount of any such Property Taxes in such period multiplied by the Lessee Percentage Interest for such period, and (b) if the Property Taxes on the Subject Facilities are assessed against both SCE and Lessee, the aggregate amount of such Property Taxes that are directly attributable to the Lessee Transfer Capability in such period.

"Applicable Reliability Standard" means reliability standards established by the WECC and reliability standards approved by FERC under Section 215 of the Federal Power Act to provide for reliable operation of the bulk power system or, if the WECC and FERC no longer have such standards, reliability standards promulgated by any federal or state agency with exercising valid jurisdiction over the Subject Facilities.

"Arbitrator" has the meaning set forth in Section 12.2.

"Balancing Authority" means the responsible entity that integrates resource plans ahead of time, maintains load-interchange-generation balance within a Balancing Authority Area, and supports interconnection frequency in real time.

"Balancing Authority Area" means the collection of generation, transmission, and loads within the metered boundaries of the Balancing Authority. The Balancing Authority maintains load-resource balance within this area.

"BLM" means the Bureau of Land Management, an agency within the United States Department of the Interior. *[Note to form: Use name of lead NEPA agency]*

"Business Day" means any day except Saturday, Sunday or a weekday on which commercial banks in New York City, New York or Los Angeles, California are required or authorized to be closed.

"CAISO" means the California Independent System Operator Corporation or its successors.

"CAISO Agreements" means the electric tariff at any time filed with FERC by the CAISO (or any successor System Operator) and any other applicable CAISO (or any successor System Operator) agreements, tariffs, manuals, protocols or rules setting forth the rights and obligations of Persons with respect to the CAISO (or any successor System Operator) controlled grid, or any successor electric tariff at any time filed with FERC setting forth the rights and obligations of Persons with respect to SCE's transmission system.

"CAISO Eligible Customer" means an "Eligible Customer" as defined in the CAISO Agreements or any other successor customer who is eligible to obtain transmission service pursuant to the CAISO Agreements.

"Collateral Assignment Agreement" has the meaning set forth in Section 11.3.

"Commercial Operation Date" and "COD" means the date on which the Project begins full commercial operation and Operational Control of the Project has been transferred to and accepted by the CAISO (or any successor System Operator) in accordance with the terms of the CAISO Agreements. For the avoidance of doubt, the Project shall not be deemed to have achieved COD for purposes of this Lease unless and until its commercial operations are of sufficient scope so that, assuming Lessee has all requisite approvals as detailed in this Lease and Lessee has validly exercised and closed its Option, Lessee would be eligible to begin collecting the full amount of its FERC-approved revenue requirement from CAISO (or any successor System Operator) for the Subject Facilities.

"Costs of Transfer Capability" means 101% of the sum of the Prepaid Rent plus all reasonably incurred project costs; development costs; regulatory costs; transactional costs; sales, use or excise tax costs; and Financing Costs incurred by Lessee allocated to the Lessee Transfer Capability. For purposes of clarity, the extra one percent is intended to account for, among other costs, the ordinary and customary lenders' fees that SCE would have incurred if it held the Lessee Transfer Capability.

"CPCN Application" means the application to the CPUC for the certificate of public convenience and necessity for the Subject Facilities (including the "Proponent's Environmental Assessment") and all schedules, exhibits, attachments and appendices thereto filed on *[Note to form: insert date of filing]*.

"CPCN Decision" means the Decision Granting a Certificate of Public Convenience and Necessity for the Subject Facilities and all attachments thereto, issued by the CPUC on *[Note to form: insert date of CPUC decision]*.

"CPUC" means the California Public Utilities Commission.

"CWIP in Ratebase" means the portion of the investment that qualifies for current return and therefore does not accrue AFUDC.

"Defaulting Party" has the meaning set forth in Section 6.1.

"DCA" has the meaning set forth in the recitals hereto.

"Effective Date" has the meaning set forth in the introductory paragraph hereto.

"Event of Default" has the meaning set forth in Section 6.1.

"FERC" means the Federal Energy Regulatory Commission or any successor federal agency.

"Final EIR/EIS" means the Final Environmental Impact Report/Environmental Impact Statement, prepared jointly by the CPUC and the [____] *[Note to form: Insert name of lead NEPA agency]*, as certified by the CPUC and defined in the CPCN Decision.

"Financing Costs" means (a) with respect to any bridge financing that Lessee may consummate prior to the term financing that Lessee will consummate for the final acquisition of the Lessee Transfer Capability, all reasonable and customary financing costs, including without limitation, lenders' fees, consultants' fees (for Lessee, its members and its lenders), lawyers' fees (for Lessee, its members and its lenders), and interest associated with such bridge financing, and (b) with respect to the term financing that Lessee will consummate for the final acquisition of its Transfer Capability, all reasonable and customary consultants' fees (for Lessee, its members and its lenders), lawyers' fees (for Lessee, its members and its lenders), and capitalized interest charged prior to commencement of rate recovery, and excluding any lenders' fees and any amounts set aside for reserve accounts.

"Force Majeure" means an event or circumstance that prevents one Party from performing its obligations hereunder, which event or circumstance was not foreseen or reasonably foreseeable as of the date the DCA was entered into, which is not within the control of or the result of the negligence of the affected Party, and which, by the exercise of due diligence, the Party is unable to mitigate or avoid or cause to be avoided, including but not limited to (but only to the extent that the following examples satisfy such definition) (a) acts of God, such as droughts, floods, earthquakes, and pestilence, (b) fires, explosions, and accidents, (c) war (declared or undeclared), riots, insurrection, rebellion, acts of the public enemy, acts of terrorism and sabotage, blockades, and embargoes, (d) storms and other climatic and weather conditions that are abnormally severe for the period of time when, and in the area where, such storms or conditions occur, including typhoons, hurricanes, tornadoes and lightning, (e) strikes or other labor disturbances, (f) changes in permits from Governmental Authorities or the conditions imposed thereunder or the failure of a Governmental Authority to issue, modify, amend or renew such permits not due to the failure of the affected Party to timely submit and diligently pursue applications, and (g) the enactment, adoption, promulgation, modification, or repeal after the date hereof of any applicable law. Notwithstanding the foregoing, under no circumstance shall an event of Force Majeure be based on (i) changes in market conditions or the economic health of a Party, (ii) the failure of an affected Party to timely seek issuance, modification, amendment or extension of any permits, approvals, or other required action from any Governmental Authority, (iii) any action or inaction by the board of directors, members or managers of a Party to the extent that such Party is seeking to excuse its failure to perform as an event of Force Majeure, (iv) any failure to make payments or otherwise meet monetary obligations when or in amounts due, (v) any breach by an affected Party of its obligations hereunder, and/or (vi) any unexcused or uncured default or breach by SCE of the terms of the ROW Grant or the ROW Agreement.

"Good Utility Practice" means (a) any of the practices, methods, and acts, engaged in or approved by a significant portion of the electric utility industry during the relevant time period, (b) any Applicable Reliability Standard, and/or (c) any of the practices, methods and acts which, in the exercise of reasonable judgment in light of the facts known at the time the decision was made, could have been expected to accomplish the desired result at a reasonable cost consistent with good business practices, reliability, safety and expedition. Good Utility Practice is not limited to the optimum practice, method, or act to the exclusion of all others, but rather to the acceptable practices, methods, or acts generally accepted in the region, including those practices required by Section 215(a)(3) of the Federal Power Act.

"Governmental Authority" means any federal, state, local, territorial or municipal government and any department, commission, board, bureau, agency, instrumentality, judicial or administrative body thereof.

"Indemnitor" has the meaning set forth in Section 3.2.1.

"Indemnitees" has the meaning set forth in Section 3.2.1.

"JAMS" has the meaning set forth in Section 12.3.1.

"Lease" has the meaning set forth in the introductory paragraph hereto.

"Lessee" has the meaning set forth in the introductory paragraph hereto.

"Lessee Transfer Capability" means the Lessee Percentage Interest of the Transfer Capability of the Subject Facilities.

"Lessee Percentage Interest" means *[Note to form: insert percentage interest as calculated pursuant to Section 4.2.1 of the DCA]*, subject to adjustment pursuant to Section 3.5.

"Lessee Share of O&M Costs" has the meaning set forth in Section 4.1.2.

"Morongo" has the meaning set forth in the recitals hereto.

"Notice" means a written notice delivered in accordance with Section 13.1.

"Operational Control" means the rights of the Balancing Authority to direct the operation of transmission facilities and other electric plants in the Balancing Authority Area affecting the reliability of those facilities for the purpose of affording comparable, non-discriminatory transmission access and meeting Applicable Reliability Standards.

"Option" has the meaning set forth in the recitals hereto.

"Parties" and "Party" have the meanings set forth in the introductory paragraph hereto.

"Percentage Interest" means the Lessee Percentage Interest or the SCE Percentage Interest, as applicable.

"Person" means any individual, corporation, partnership, limited liability company, joint venture, trust, unincorporated organization or Governmental Authority.

"Personal Property" means any and all electrical equipment, fixtures or other facilities and personal property associated with the Subject Facilities which does not constitute real property or improvements.

"Personal Property Taxes" means all taxes, assessments, license fees and other charges that are levied and assessed during the Term against Personal Property.

"Prepaid Rent" has the meaning set forth in Section 4.1.1.

"Project" has the meaning set forth in Exhibit E attached hereto.

"Property Taxes" means all Real Property Taxes and all Personal Property Taxes (without duplication).

"PTO" means a Participating TO or Participating Transmission Owner as defined in the CAISO Agreements.

"Real Property Taxes" means all real property general and special taxes and assessments levied and assessed against the land and improvements associated with the Subject Facilities, including without limitation real property assessments and taxes, water and sewer and other similar governmental charges levied upon or attributable to the Subject Facilities, assessments or charges levied upon or assessed against the Subject Facilities by any redevelopment agency, and any tax upon or with respect to the possession, leasing, operation, management, maintenance, alteration, repair, use or occupancy of the Subject Facilities or any portion thereof.

"Referral Date" has the meaning set forth in Section 12.2.

"Reimbursable Property Taxes" means any Property Tax assessed against the Subject Facilities that are directly attributable to the Lessee Transfer Capability and paid by SCE.

"Rent" has the meaning set forth in Section 4.1.2.

"ROW Agreement" has the meaning set forth in the recitals hereto.

"ROW Grant" means the United States Department of the Interior's Grant of Easements and Rights-of-Way for Electric Transmission Lines and Appurtenant Fiber-Optic Telecommunications Lines and Access Roads On and Across Lands of the Morongo Indian Reservation pursuant to 25 U.S.C. Section 323 to which Morongo has consented as of *[Note to form: insert date of ROW Grant.]*

"SCE" has the meaning set forth in the introductory paragraph hereto.

"SCE Indenture" means that certain Trust Indenture dated as of October 1, 1923 from SCE as trustor to The Bank of New York Mellon Trust Company, N.A. and D.G. Donovan, as trustees.

"SCE Percentage Interest" means SCE's ownership interest in the Transfer Capability of the Subject Facilities, less the Lessee's Percentage Interest. SCE shall own 100% of the ownership interests and the Transfer Capability in the Subject Facilities other than the Lessee Percentage Interest.

"SCE Representative Rate" has the meaning set forth in Section 4.3.2.

"Subject Facilities" has the meaning set forth in Exhibit E attached hereto.

"System Operator" means (a) the CAISO, (b) if SCE is no longer a member of the CAISO, the successor regional transmission entity, if any, that has Operational Control over SCE's transmission system and provides transmission service under rates, terms and conditions regulated by FERC pursuant to Section 205 of the Federal Power Act or any successor federal statute, or (c) if SCE is no longer a member of the CAISO or any such successor regional transmission entity, SCE.

"Term" has the meaning set forth in Section 2.2.

"Total Actual Costs" means the total costs incurred by SCE to develop, design, permit, engineer, procure, construct and commission the Subject Facilities, including AFUDC and post-construction mitigation measures, where applicable. For the avoidance of doubt, Total Actual Costs shall not include any fees payable by SCE to Morongo pursuant to the ROW Grant.

"Transfer Capability" means the maximum amount of power (in mega-watts) that can be transferred over part, or all, of the Subject Facilities at any time in a reliable manner while meeting all of a specific set of defined pre-contingency and post-contingency system configurations and conditions in accordance with WECC standards and Good Utility Practices. Subject to Section 4.3.4, the holder or lessee of Transfer Capability that is under the Operational Control of the CAISO (or any successor System Operator) for the benefit of and made available to CAISO Eligible Customers, is entitled to all associated rights and revenues from use of the Transfer Capability as defined (or subsequently defined) by the CAISO Agreements, or, in the absence of any such CAISO Agreements, all associated rights and revenues from use of the Transfer Capability, as defined (or subsequently defined) by the System Operator. Such holder or lessee shall not have any right or preference to transfer power over the Subject Facilities, or to interconnect with the Subject Facilities, by reason of holding or leasing Transfer Capability.

"Useful Life of the Project" means the period during which the Project can provide or is capable of providing transmission service, which SCE currently estimates to be approximately fifty-seven (57) years.

"WECC" means the Western Electricity Coordinating Council.

Section 1.2 Rules of Interpretation. Unless otherwise provided herein or the context otherwise requires: (a) words denoting the singular include the plural and vice versa; (b) words denoting a gender include both genders; (c) references to a particular part, clause, section, paragraph, article, party, exhibit, schedule or other attachment shall be a reference to a part, clause, section, paragraph, or article of, or a party, exhibit, schedule or other attachment to the document in which the reference is contained; (d) a reference to any statute or regulation includes all statutes or regulations varying, consolidating or replacing the same from time to time, and a reference to a statute includes all regulations issued or otherwise applicable under that statute to the extent consistent with the Parties' original intent hereunder; (e) a reference to a particular section, paragraph or other part of a particular statute shall be deemed to be a reference to any other section, paragraph or other part substituted therefor from time to time; (f) a definition of or reference to any document, instrument or agreement includes any amendment or supplement to, or restatement, replacement, modification or novation of, any such document, instrument or agreement; (g) a reference to any person includes such person's successors and permitted assigns in that designated capacity; (h) any reference to "days" shall mean calendar days unless Business Days are expressly specified; and (i) examples shall not be construed to limit, expressly or by implication, the matter they illustrate.

ARTICLE II. LEASE; TERM

Section 2.1 Lease. SCE hereby leases to Lessee, and Lessee hereby leases from SCE, the Lessee Transfer Capability on the terms and conditions set forth in this Lease. SCE shall continue to own 100% of the ownership interests and the Transfer Capability in the Subject Facilities other than the Lessee Percentage Interest.

Section 2.2 Term. The term of this Lease shall commence as of the Effective Date and shall expire (unless otherwise earlier terminated pursuant to this Lease) at 11:59 p.m. Pacific time on the day before the thirtieth (30th) anniversary of the Effective Date (the "Term"). At the conclusion of the Term, Lessee shall have no further interest in the Subject Facilities hereunder, the Lessee Transfer Capability shall revert to SCE, and Lessee and SCE shall have no further rights or obligations vis-à-vis each other except to pay amounts and fulfill other obligations existing as of the time of conclusion of the Lease.

ARTICLE III. COMPLETION OF CONSTRUCTION; UPGRADES AND REPAIRS; OPERATION AND MAINTENANCE; INTERCONNECTION

Section 3.1 Completion of Construction. SCE shall use commercially reasonable efforts to achieve COD and thereafter complete all punch list items and all other final construction activities on the Subject Facilities as soon as reasonably practicable. For avoidance of doubt, for purposes of this Article III and any other provisions of this Lease relating to work performed on the Subject Facilities by SCE, SCE may undertake work on the Subject Facilities itself or through third party contractors.

Section 3.2 Operation and Maintenance. Except to the extent SCE has transferred Operational Control of the Subject Facilities to the CAISO, SCE shall be responsible for overseeing and performing all operations and maintenance services for the Subject Facilities in accordance with all regulations and Good Utility Practice, including CAISO standards and agreements.

Section 3.2.1 Sharing of Benefits and Burdens. Except as provided in Section 9.2, SCE and Lessee intend to share the benefits and burdens of the Subject Facilities, including any damages, claims or actions arising out of or relating to the operation or maintenance of the Subject Facilities, whether the result of any act, failure to act or otherwise, and whether by negligence or otherwise, in accordance with their percentage share of the Transfer Capability in the Subject Facilities. Accordingly, except as provided in Section 9.2, each Party ("Indemnitor") shall be responsible for, and shall indemnify the other Party and its officers, employees, members, representatives, advisors, contractors and agents ("Indemnitees") from and against, such Indemnitor's Percentage Interest of all liability and expense on account of any and all damages, claims or actions including injury to or death of persons or damage to property arising out of or pertinent to the operation or maintenance of the Subject Facilities, whether the result of any act or failure to act by either Party, its officers, employees, members, representatives, advisors, contractors or agents or otherwise, and whether by negligence or otherwise. Except as provided in Section 9.2, the indemnification provisions set forth in this Section 3.2.1 shall apply to all types of claims or actions including, but not limited to, claims or actions based on contract, tort, patent or trademark. The provisions of this Section 3.2 shall not be construed so as to relieve any insurer of its obligation to pay any insurance proceeds in accordance with the terms and conditions of its insurance policies. Lessee shall request, in its transmission service tariff filed with FERC pursuant to Section 4.2, and SCE shall support, through timely intervention and active participation in any proceeding relating to or affecting Lessee's rates, rate recovery of any payments for Lessee's indemnity obligations under this Section 3.2.

Section 3.2.2 Insurance. The gross amount that an Indemnitor is liable to, for, or on behalf of an Indemnitee shall be reduced by any insurance proceeds received by or on behalf of the Indemnitee in respect of the damage, claim, or action giving rise to an indemnity obligation hereunder. Further, each Party hereby waives all rights of recovery against the other Party on account of loss, damage, or injury incurred by such waiving Party to the extent that such loss, damage, or injury is insured against and covered under any insurance policies of such waiving Party; provided, however, that such waiver shall not be effective if it voids or otherwise invalidates any coverage or policy. Each Party shall cause its insurance policies to provide that the insurance company waives all right of recovery by way of subrogation against the other Party in connection with any damage covered by such policy.

Section 3.3 Future Upgrades; Increases in Transfer Capability. Subject to the other terms and conditions of this Lease, SCE shall be solely entitled to decide upon, develop, design, engineer, procure, construct, commission, own, operate, maintain and finance any upgrades to all or any portion of the Subject Facilities after the Commercial Operation Date for purposes of increasing the Transfer Capability of all or any portion of the Subject Facilities. SCE shall be solely responsible to pay the costs of such upgrades. Lessee agrees that it will not oppose any upgrades sought before any Governmental Authority, CAISO (or any successor System Operator), or Balancing Authority by SCE.

Section 3.4 Future Replacement and Renewal; No Increases in Transfer Capability. SCE shall be solely entitled to determine whether any additional capital investment is needed for replacement or renewal of facilities of the Subject Facilities resulting in no increases in the Transfer Capability of the Subject Facilities, and if so, the timeframe for the same. SCE shall be solely entitled to itself undertake or undertake by way of contracts with others to develop, design, engineer, procure, construct, commission, own, operate, maintain and finance such replacement or renewals of the facilities of the Subject Facilities. SCE shall be responsible for all costs of such replacement or renewal.

Section 3.5 Adjustment of Lessee Percentage Interest. The Lessee Percentage Interest shall be adjusted as follows upon thirty (30) days written notice (which notice will contain reasonable detail as to the reasons for the adjustment, the calculation of the adjusted amounts and the effective date of such adjustment) to Lessee:

Section 3.5.1 True-Up for Total Actual Costs. The Parties acknowledge that the Lessee Percentage Interest has been determined prior to the date when Total Actual Costs are fully known. Accordingly, SCE shall provide to Lessee an accounting of such costs promptly after the SCE has finally determined such costs pursuant to Section 4.1.1, and the Lessee Percentage Interest shall be determined by the following formula: (Amount of Prepaid Rent payment/Total Actual Costs) times 100.

Section 3.5.2 Future Upgrades in Transfer Capability. To the extent that the Subject Facilities are upgraded pursuant to Section 3.3 resulting in increases or decreases in the Transfer Capability of the Subject Facilities, then all such increases or decreases in Transfer Capability resulting from such upgrade shall be allocated to SCE and the Lessee Percentage Interest shall be adjusted accordingly. For example, if the Subject Facilities were rated at 1000MW, a given upgrade to the Subject Facilities would cause the rating to increase by 200MW and at the time of the upgrade Lessee and SCE each held a 50% share of the Transfer Capability on the Subject Facilities, then the Lessee Percentage Interest on the Subject Facilities would decrease from 50% to 41.67% (500MW / 1200MW).

Section 3.5.3 Future Replacement and Renewal. To the extent that SCE makes any additional capital investments in the Subject Facilities pursuant to Section 3.4 resulting in no increases in the Transfer Capability of the Subject Facilities, the Lessee Percentage Interest shall be adjusted so that it equals the quotient of (a) the Lessee Percentage Interest of the Subject Facilities multiplied by the former net book value of the Subject Facilities prior to such additional capital investment divided by (b) the new net book value of the Subject Facilities (including all new funding of replacements or renewals as part of the new net book value). For example, assume that the Subject Facilities has a net book value of $300 million prior to replacement or renewals and requires additional capital investments of $10 million for replacement costs pursuant to Section 3.4 (and thus would have a net book value of $310 million subsequent to such replacement or renewal). If the Lessee Percentage Interest is 50% and SCE makes such $10 million capital investment in the Subject Facilities, then the Lessee Percentage Interest would be reduced from 50% to 48.39%. For purposes of this section, the "net book value" of the Subject Facilities shall be equal to SCE's historical cost basis of the Subject Facilities less accumulated depreciation as determined by Generally Accepted Accounting Principles. For the avoidance of doubt, the amount of Rent that Lessee pays to SCE shall not reduce the cost basis.

Section 3.5.4 Other Future Changes in Transfer Capability. For avoidance of doubt, the Lessee Percentage Interest shall not be adjusted as a result of any increases or decreases in the Transfer Capability on the Subject Facilities resulting from changes to the configuration of adjoining systems or upgrades to adjoining systems, including SCE's system beyond the Subject Facilities.

Section 3.6 Interconnection Facilities. Subject to the CAISO Agreements and rules governing interconnection, as between SCE and Lessee, SCE will be the interconnection agent for the Subject Facilities. In particular, SCE will process all requests for interconnection to the Subject Facilities, SCE will develop, design, engineer, procure, construct, commission, own, operate, maintain, and arrange funding for such interconnection facilities, including all substations and switchyards connected to the Subject Facilities, and SCE will retain all ownership and transfer capability interests in such interconnection facilities.

ARTICLE IV. RENT; RATE RECOVERY

Section 4.1 Rent. The rent due under this Lease shall be as follows:

Section 4.1.1 Prepaid Rent. Pursuant to Section 4.2.3 of the DCA, concurrently with the execution of this Lease, Lessee has made a payment to SCE as prepaid rent (the "Prepaid Rent") for Transfer Capability under this Lease in the amount of [$____________].

Section 4.1.2 Additional Rent. Lessee shall pay additional rent monthly in arrears in an amount equal to the sum of (a) the operations and maintenance costs incurred by SCE pursuant to Section 3.2 with respect to the Subject Facilities reasonably attributable to the Lessee Transfer Capability, including a reasonable allocation of administrative and general activities, general and common plant, non-capitalized land lease costs, any sales, use, excise tax and other costs described in Exhibit A attached hereto (which shall exclude Property Tax) (the "Lessee Share of O&M Costs"), plus (b) Reimbursable Property Tax (such sum, the "Additional Rent" and, together with the Prepaid Rent, the "Rent"). Although Lessee's obligation to pay Additional Rent under this Lease shall not be contingent upon Lessee's recovery of such Rent under its transmission service tariff filed with FERC, for the avoidance of doubt, SCE shall not include any cost component in the Lessee Share of O&M Costs if SCE is not allowed to recover such cost component under its transmission service tariff filed with FERC. SCE shall provide to Lessee a calculation of the Additional Rent within thirty (30) days after the conclusion of each month during the Term and Lessee shall be required to pay such amount to SCE within thirty (30) days after receipt thereof. [*Note to form: the final execution version should include the final Exhibit A.*]

Section 4.2 Regulation of Lessee's Rates. Subject to Section 4.3, Lessee has filed or caused to be filed with FERC a transmission service tariff for recovery of its costs associated with the Lessee Transfer Capability. The Lessee Transfer Capability shall be provided for the benefit of and made available to CAISO Eligible Customers (or similarly situated customers of the successor System Operator in the event the CAISO is no longer the System Operator) at rates, terms and conditions deemed just and reasonable and not unduly discriminatory by FERC pursuant to Section 205 of the Federal Power Act.

Section 4.3 Lessee's Cost Recovery Methodology. Lessee has sought from FERC a cost recovery methodology that provides cost recovery to Lessee limited to the recovery of the following transmission costs. For the avoidance of doubt, Lessee shall be entitled to, and SCE shall support, through timely intervention and active participation in any proceeding relating to or affecting Lessee's rates, rate recovery for capital costs that is not affected by any reduction in its Transfer Capability associated with SCE's funding of renewals, replacements or upgrades to all or any portion of the Subject Facilities pursuant to Section 3.3, Section 3.4 or otherwise. Notwithstanding anything in this Lease to the contrary, Lessee's actual cost recovery methodology shall be governed by orders approved by FERC.

Section 4.3.1 Operating Costs. Lessee has sought recovery of the Lessee Share of O&M Costs incurred by Lessee as provided for in Section 4.1.2 and its ratable share of all other reasonably and prudently incurred costs for operation and maintenance of the Subject Facilities under this Lease on an annual formulaic basis, including administrative and general activities (and any sales, use, and excise tax) and the Applicable Portion of Property Taxes directly attributable to the Lessee Transfer Capability on the Subject Facilities as recorded in FERC accounts, including but not limited to the following accounts: 408.1, 560-573, 908, and 920-935 under the FERC Uniform System of Accounts.

Section 4.3.2 Capital Requirements. Lessee has sought recovery for all other costs associated with the Lease at a fixed rate that provides for recovery of Lessee's costs but does not exceed the rate SCE could recover at the time of COD if SCE held the Lessee Transfer Capability (the "SCE Representative Rate"). This fixed rate is intended to cover all costs associated with the Lessee (other than the operating costs described in Section 4.3.1 above) including Prepaid Rent (including capitalized property taxes) and other costs of Transfer Capability, debt service, capitalized interest, liquidity reserves, taxes (excluding the Applicable Portion of Property Taxes and the sales, use, or excise taxes which are included in the Lessee Share of O&M Costs and the operating costs addressed by Section 4.3.1 above), charitable contributions, and any and all other costs. For purposes of determining the SCE Representative Rate, the Parties agree to use the model attached hereto as Exhibit B. The model calculates a theoretical revenue requirement for the Useful Life of the Project as if SCE held the Lessee Transfer Capability, discounts that revenue requirement to a thirty year period, and calculates an annual levelized SCE Representative Rate over that thirty year period. Notwithstanding anything in this Lease to the contrary, Exhibit B and this Section 4.3.2 shall be automatically revised to conform to any modifications to the methodology for calculating the SCE Representative Rate ordered by FERC in its decisions approving Lessee's rate methodology for recovery of costs associated with this Lease. For the avoidance of doubt, except to the extent permitted under Section 4.3.3, Lessee shall not seek to modify the SCE Representative Rate as approved by FERC as of the Effective Date.

(a) The model in Exhibit B calculates the SCE Representative Rate using the following inputs: (1) SCE's capital structure fixed at 50% equity and 50% debt (2) SCE's authorized return on equity for its FERC-jurisdictional transmission assets as of the Effective Date of [___%], (3) SCE's state income tax rate fixed as of the Effective Date of [___%] and federal income tax rate fixed as of the Effective Date of [___%], (4) SCE's estimated debt rate, which is the average of the five-day average of each of Moody's A 30-year Utility Bond Index and Moody's Baa 30-year Utility Bond Index as set forth in the Bloomberg LLC system, mnemonics ________ and _________ as of the Effective Date, equaling [___]%, (5) the actual Costs of Transfer Capability of $[__________], and (6) the portion of the actual Costs of Transfer Capability that is SCE's actual AFUDC, if any, of $[________]. [*Note to form: The bracketed numbers above and the final model as of the Effective Date should be populated with SCE's authorized return on equity for its FERC-jurisdictional transmission assets, SCE's state and federal income tax rates, the actual average of the five-day average of Moody's A 30-year Utility Bond Index and Moody's Baa 30-year Utility Bond Index, the actual Costs of Transfer Capability, and the portion of the actual Costs of Transfer Capability that is actual SCE AFUDC, if any, all of which should be known at the time of execution.*]

(b) In connection with the filing of its initial application seeking FERC approval of its annual fixed rate methodology for recovery of the costs described in this Section 4.3.2, Lessee has demonstrated to FERC that its proposed rate methodology (including any of the adjustments described under Section 8.3) results in an annual fixed rate that does not exceed the SCE Representative Rate (which also shall include any adjustments described under Section 8.3).

(c) In connection with the consummation of the debt financing transaction for this Lease, and at such time as Lessee submits its compliance filing to FERC showing its actual rates based on the FERC-approved annual fixed rate methodology, Lessee shall demonstrate to FERC that its FERC-approved annual fixed rate for recovery of the costs described in this Section 4.3.2 (excluding any of the adjustments described under Section 8.3) does not exceed the SCE Representative Rate (which does not include any of the adjustments described under Section 8.3).

(d) In the event Lessee is not able to demonstrate to the FERC that its fixed annual rate (excluding any of the adjustments described under Section 8.3) does not exceed the SCE Representative Rate (which also does not include any of the adjustments described under Section 8.3), then Lessee agrees to limit or cap its fixed annual rate (excluding any of the adjustments described under

Section 8.3) to equal the SCE Representative Rate (which also does not include any of the adjustments described under Section 8.3).

Section 4.3.3 Waiver of Section 205/206 Rights. Except to the extent a change in law, rule, or regulation results in any new taxes, income taxes, Property Taxes, fees or other charges being levied by a Governmental Authority, to the fullest extent permitted by applicable law, Lessee, for itself and its successors and assigns, shall waive any rights it can or may have, now or in the future, whether under Sections 205 and/or 206 of the Federal Power Act or otherwise, to seek to obtain from FERC by any means, directly or indirectly (through complaint, investigation or otherwise), and Lessee covenants and agrees not at any time to seek to so obtain, an order from FERC changing the FERC-approved fixed rate for recovery of the costs described in Section 4.3.2 above. For the avoidance of doubt, to the extent a change in law, rule, or regulation results in any new taxes, income taxes, property taxes, fees or other charges being levied by a Governmental Authority, Lessee may seek approval for inclusion in its rates an allowance to recover any such new taxes, income taxes, Property Taxes, fees or other charges. SCE shall fully support, through timely intervention and active participation in any proceeding relating to or affecting Lessee's rates, Lessee's recovery and implementation of rates conforming to the provisions of this Lease in accordance with Section 205 of the Federal Power Act and orders issued by FERC thereunder in order that Lessee may acquire, finance, operate and maintain its leasehold interest in the Subject Facilities. SCE acknowledges that among other things, Lessee has sought recovery of and SCE will support Lessee as a PTO seeking to recover from CAISO Eligible Customers in its transmission revenue requirement for the Subject Facilities (a) all prudently incurred pre-commercial operations costs in current rates, (b) all costs of abandoned facilities, provided such abandonment is due to factors beyond Lessee's control, and (c) all capital requirements as described in Section 4.3.2 above. SCE's support shall include providing FERC with assurances that all costs sought to be recovered by Lessee through its rates that were originally incurred by SCE were prudently incurred.

Section 4.3.4 Credits. Lessee shall credit to CAISO Eligible Customers any revenues that are derived from, or associated with, this Lease that are in addition to its cost-of-service recovery described above, including any tax credit payments from SCE under Section 8.3. Lessee's obligations under this Section 4.3.4 shall be satisfied by crediting any such revenues against costs that it seeks to recover in its rates.

ARTICLE V. MEETINGS; OTHER AGREEMENTS

Section 5.1 Meetings. Either Party may call a meeting for the purpose of discussing the Subject Facilities upon reasonable advance notice and in coordination with the other Party. For avoidance of doubt, SCE shall be solely responsible for and shall make all final decisions with respect to the development, design, permitting, engineering, procurement, construction, commissioning, upgrades, capital expenditures, repairs, replacement, renewals, operation and maintenance of the Subject Facilities; provided, however, that SCE shall (a) provide Lessee with such information regarding the development, design, permitting, engineering, procurement, construction, commissioning, upgrades, capital expenditures, repairs, replacement, renewals, operation, and maintenance of the Subject Facilities as may reasonably be requested by Lessee, and (b) promptly inform Lessee of any material change or development regarding the foregoing that would significantly impact Lessee or the Lessee Transfer Capability.

Section 5.2 SCE Covenants.

Section 5.2.1 SCE Provision of Cost Recovery. During the Term, if (a) SCE is no longer part of the CAISO or a successor regional transmission entity that has Operational Control over SCE's transmission system and (b) SCE has Operational Control over the Lessee Transfer Capability, then SCE shall guarantee or financially support (as applicable under the circumstances) the receipt by Lessee of any and all costs specified in Sections 4.3.1 and 4.3.2 as if Lessee were still recovering these costs under its FERC-filed and accepted transmission service tariff; provided, however, that if SCE is not then recovering any of the costs of SCE's transmission system through regulated, cost of service rates, SCE's guarantee or financial support shall be limited to debt service payments due to Lessee's lenders (but not any other costs specified in Sections 4.3.1 or 4.3.2). While SCE is part of the CAISO or a successor regional transmission entity that has Operational Control over SCE's transmission system, SCE shall assist Lessee in obtaining, but not be required to guarantee or financially support, Lessee's recovery of costs incurred pursuant to this Lease.

Section 5.2.2 Information Sharing. Upon reasonable notice and during regular business hours, and subject to Lessee entering into customary non-disclosure agreements, SCE shall allow Lessee access to the Subject Facilities site and to SCE's Project-related personnel, contracts, books and records, and other documents and data of SCE relating to the Project and provide other information related to the Subject Facilities as may be reasonably requested by Lessee, including but not limited to:

(a) Costing information to ensure that costs for the Subject Facilities are allocated to appropriate portions of the Subject Facilities and that SCE keeps its accounts and provides sufficient information to Lessee to allow Lessee to review those allocations and accounts on an on-going basis;

(b) Permitting information;

(c) Plans, specifications, design, or maps of the Subject Facilities; and

(d) Contracts reasonably deemed material that affect the development, design, permitting, engineering, procurement and construction of the Subject Facilities.

Section 5.2.3 ROW Grant Fees. SCE covenants that the fees payable by SCE to Morongo pursuant to the ROW Grant and the ROW Agreement will be characterized as "non-capitalized land lease costs" as such term is used in Section 4.1.2.

Section 5.3 Lessee Covenants.

Section 5.3.1 Information Sharing. Upon reasonable notice, Lessee shall provide information related to the Subject Facilities as may be reasonably requested by SCE.

Section 5.3.2 Control. At all times during the Term, Lessee shall execute any documents reasonably requested by SCE and provide any other cooperation reasonably requested by SCE in order to cause the Lessee Transfer Capability to be under the Operational Control of the CAISO (or any successor System Operator).

ARTICLE VI. EVENTS OF DEFAULT; REMEDIES

Section 6.1 Events of Default. An "Event of Default" shall mean, with respect to either Party (a "Defaulting Party"), the occurrence of any of the following:

Section 6.1.1 Failure to Make Payment. A Party shall fail to make payments for amounts due under this Lease within thirty (30) days after notice that such payment is past due.

Section 6.1.2 Failure to Perform. A Party shall fail to comply with any other material provision of this Lease (other than failures covered by Section 6.1.1), and any such failure shall continue uncured for thirty (30) days after notice thereof; provided, however, that if such failure is not capable of being cured within such period of thirty (30) days with the exercise of reasonable diligence, then such cure period shall be extended for an additional reasonable period of time so long as the Defaulting Party is exercising commercially reasonable efforts to cure such failure.

Section 6.1.3 Failure of Representation. Any representation made by a Party hereunder shall fail to be true in any material respect at the time such representation is given and such failure shall not be cured within thirty (30) days after notice thereof by the non-Defaulting Party.

Section 6.1.4 CAISO Control. If, due to any action or inaction of Lessee, any of the Lessee Transfer Capability shall fail to be:

(a) provided for the benefit of and made available to CAISO Eligible Customers at rates, terms and conditions deemed just and reasonable and not unduly discriminatory by FERC pursuant to Section 205 of the Federal Power Act; or

(b) in the Balancing Authority Area and under the Operational Control of the CAISO or a successor System Operator; and any such failure shall continue uncured for ninety (90) days after Notice thereof from SCE to Lessee.

Section 6.1.5 Assignment. The failure to comply with the assignment and subletting provisions of Section 11.1 and Section 11.2.

Section 6.1.6 Bankruptcy. Such Party becomes bankrupt.

Section 6.2 Remedies. Subject to Article XII and Section 6.3, if an Event of Default occurs and is continuing, the non-Defaulting Party shall have the right to pursue all remedies available at law or in equity, including without limitation, the right to institute an action, suit or proceeding in equity for specific performance of the obligations under this Lease.

Section 6.3 Limitation on Liability. THERE IS NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO ANY PRODUCT, AND ANY AND ALL IMPLIED WARRANTIES ARE DISCLAIMED. THE OBLIGOR'S LIABILITY SHALL BE LIMITED TO DIRECT ACTUAL DAMAGES ONLY, SUCH DIRECT ACTUAL DAMAGES TO BE THE SOLE AND EXCLUSIVE REMEDY AND ALL OTHER REMEDIES OR DAMAGES AT LAW OR IN EQUITY (OTHER THAN INJUNCTIVE RELIEF AS PROVIDED IN THIS LEASE) ARE WAIVED. NOTWITHSTANDING ANYTHING TO THE CONTRARY IN THIS LEASE, NEITHER PARTY SHALL BE LIABLE TO THE OTHER PARTY FOR ANY INDIRECT, SPECIAL, EXEMPLARY, INCIDENTAL, PUNITIVE, LOST PROFITS, BUSINESS INTERRUPTION OR CONSEQUENTIAL DAMAGES WHATSOEVER UNDER ANY THEORY, INCLUDING BY STATUTE, CONTRACT, TORT (INCLUDING NEGLIGENCE) OR STRICT LIABILITY, UNDER ANY INDEMNITY PROVISIONS SET FORTH IN THIS LEASE OR OTHERWISE, RESULTING FROM A PARTY'S PERFORMANCE OR NONPERFORMANCE OF ITS OBLIGATIONS UNDER OR TERMINATION OF THIS LEASE. THE PARTIES INTEND THAT THE LIMITATIONS HEREIN IMPOSED ON REMEDIES AND THE MEASURE OF DAMAGES BE WITHOUT REGARD TO THE CAUSE OR CAUSES RELATED THERETO, INCLUDING THE NEGLIGENCE OF ANY PARTY, WHETHER SUCH NEGLIGENCE BE SOLE, JOINT OR CONCURRENT, OR ACTIVE OR PASSIVE. NOTHING IN THIS SECTION PREVENTS OR IS INTENDED TO PREVENT A PARTY FROM SEEKING SPECIFIC PERFORMANCE UNLESS PERFORMANCE IS OTHERWISE EXCUSED HEREIN. THE PROVISIONS OF THIS SECTION 6.3 SHALL NOT BE CONSTRUED TO RELIEVE ANY INSURER OF ITS OBLIGATION TO PAY ANY INSURANCE PROCEEDS IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF VALID AND ENFORCEABLE INSURANCE POLICIES.

ARTICLE VII. REPRESENTATIONS AND WARRANTIES

Section 7.1 SCE. As of the Effective Date, SCE represents and warrants as follows:

Section 7.1.1 Organization and Existence. SCE is a duly organized and validly existing corporation in good standing under the laws of the State of California and is qualified to transact business in all jurisdictions where the ownership of its properties or its operations require such qualification, except where the failure to so qualify would not have a material adverse effect on its financial condition, its ability to own its properties or transact its business, or to carry out the transactions and activities contemplated hereby.

Section 7.1.2 Execution, Delivery and Enforceability. SCE has full corporate power and authority to carry on its business as now conducted, enter into, and to carry out its obligations under this Lease. The execution, delivery and performance by SCE of this Lease, and the consummation of the transactions and activities contemplated under this Lease, have been duly authorized by all necessary corporate action required on the part of SCE. This Lease has been duly and validly executed and delivered by SCE and constitutes the valid and legally binding obligations of SCE, enforceable against SCE in accordance with its terms, except as such enforceability may be limited by bankruptcy, insolvency, reorganization, moratorium or other similar laws of general application relating to or affecting the enforcement of creditors' rights and by general equitable principles.

Section 7.1.3 No Violation. None of the execution and delivery of this Lease, the compliance with any provision hereof, nor the consummation of the transactions and activities contemplated hereby will: (a) violate or conflict with, or result in a breach or default under, any provisions of the articles of incorporation or bylaws of SCE; or (b) violate or conflict with, or result in a breach or default under, any applicable law or regulation of any Governmental Authority, or any material agreement to which SCE is a party or by which its assets are bound, other than such violations, conflicts, breaches or defaults which, in the aggregate, would not have a material adverse effect on SCE's performance of its obligations under this Lease. [*Confirm that there will not be any outstanding regulatory consents required upon the Effective Date.]*

Section 7.2 Lessee. As of the Effective Date, Lessee represents and warrants as follows:

Section 7.2.1 Organization and Existence. Lessee is a duly organized and validly existing limited liability company in good standing under the laws of Delaware and is qualified to transact business in all jurisdictions where the ownership of its properties or its operations require such qualification, except where the failure to so qualify would not have a material adverse effect on its financial condition, its ability to own its properties or transact its business, or to carry out the transactions and activities contemplated hereby.

Section 7.2.2 Execution, Delivery and Enforceability. Lessee has full limited liability company power and authority to carry out its obligations under this Lease. The execution, delivery and performance by Lessee of this Lease, and the consummation of the transactions and activities contemplated under this Lease, have been duly authorized by all necessary limited liability company action required on the part of Lessee. This Lease has been duly and validly executed and delivered by Lessee and constitutes the valid and legally binding obligations of Lessee, enforceable against Lessee in accordance with its terms, except as such enforceability may be limited by bankruptcy, insolvency, reorganization, moratorium or other similar laws of general application relating to or affecting the enforcement of creditors' rights and by general equitable principles.

Section 7.2.3 No Violation. None of the execution and delivery of this Lease, the compliance with any provision hereof, nor the consummation of the transactions and activities contemplated hereby will: (a) violate or conflict with, or result in a breach or default under, any provisions of the certificate of formation or operating agreement of Lessee; or (b) violate or conflict with, or result in a breach or default under, any applicable law or regulation of any Governmental Authority or any material agreement to which Lessee is a party or by which its assets are bound, other than such violations, conflicts, breaches or defaults which, in the aggregate, would not have a material adverse effect on Lessee's performance of its obligations under this Lease. [*Confirm that there will not be any outstanding regulatory consents required upon the Effective Date*.]

Section 7.2.4 No Objection to Current Design. Lessee has no objection to the proposed schedule, plans, specifications, and design of the Subject Facilities to the extent described in SCE's CPCN Application, the Final EIR/EIS, and the CPCN Decision.

ARTICLE VIII. TAXES AND ASSESSMENTS

Section 8.1 Property Taxes. The Parties contemplate that the Property Taxes on the Subject Facilities will be assessed by the California State Board of Equalization. If the Property Taxes on the Subject Facilities are assessed against and paid by SCE and no Property Taxes are assessed on the Lessee Transfer Capability against Lessee, then the Additional Rent for any period shall include the Applicable Portion of Property Taxes for such period. If the Property Taxes on the Subject Facilities are assessed against and paid by both SCE and Lessee, then the Additional Rent for any period shall be adjusted so that Lessee bears the cost of the Applicable Portion of Property Taxes either by reimbursement to SCE or payment directly to taxing authorities and SCE bears the remainder of the costs of such Property Taxes. If during the Term the regulatory regime by which Property Taxes are assessed shall change, then the Parties shall make appropriate adjustments to this Section 8.1 so that Lessee bears the cost of the Applicable Portion of Property Taxes either by reimbursement to SCE or payment directly to taxing authorities.

Section 8.2 Section 467 Rental Agreement. It is the intention of the Parties that (a) this Lease constitute a "Section 467 rental agreement" within the meaning of Section 467(d)(l) of the U.S. Internal Revenue Code and (b) that prepaid rent accrue for U.S. tax purposes in accordance with Section 467(b)(l) of the U.S. Internal Revenue Code, and the provisions of this Lease shall to the fullest extent feasible be construed consistent with such intention. Attached hereto as Exhibit C is a schedule allocating the Prepaid Rent over the Term, and as shown on such schedule, the Parties shall treat items of income and expense in a reciprocal manner. The Parties shall report the Prepaid Rent as accruing for tax purposes quarterly in arrears. The Parties shall treat the Prepaid Rent to the extent it exceeds the rent that has accrued as a loan by Lessee to SCE that bears interest at a rate equal to 110% of the "applicable federal rate" as required by Section 467(e)(4) of the U.S. Internal Revenue Code. [*Note to form: the final execution version should include the final Exhibit C.*]

Section 8.3 Tax Benefits. As the owner of the residual interest in the Lessee Transfer Capability after the expiration or earlier termination of this Lease, SCE may be deemed to be the tax owner of the entire Subject Facilities and may be entitled to receive tax credits or benefits, including bonus tax depreciation deductions, in connection with its ownership of the Subject Facilities that Lessee may not be entitled to receive in connection with its ownership of a leasehold interest in the Subject Facilities. To the same extent that SCE seeks such tax credits or benefits related to its interest in the Subject Facilities, SCE shall also seek such tax credits or benefits related to Lessee's interest in the Subject Facilities. To the extent SCE realizes such tax credits or benefits related to Lessee's interest in the Subject Facilities and only to the extent such tax credits or benefits are not already accounted for in the SCE Representative Rate model, SCE shall pay or credit to Lessee each year an amount equal to the annual revenue requirement reduction SCE could have realized from ratepayers if SCE could reduce its rates associated with such tax credits or benefits related to Lessee's interest in the Subject Facilities, as may be reasonable and appropriate for the particular tax credit or benefit. The Parties acknowledge that neither the tax credits or benefits that SCE may be entitled to nor the potential reduction in SCE's rates associated with such tax credits or benefits, each as described under this Section 8.3, are fully known to the Parties as of the Effective Date.

Accordingly, the Parties shall cooperate to determine a reasonable and equitable payment amount under this Section 8.3 each year of the Term.

ARTICLE IX. INSURANCE; INDEMNITY

Section 9.1 Insurance. SCE shall insure the Subject Facilities in accordance with its standard practices with respect to transmission projects. If SCE does not apply the insurance proceeds it receives directly attributable to the damage or destruction of the Subject Facilities toward the repair, reconstruction, or replacement of the Subject Facilities, SCE shall pay to Lessee a pro rata share of such insurance proceeds to the extent of its interest remaining in the Subject Facilities. If SCE does apply the insurance proceeds it receives directly attributable to the damage or destruction of the Subject Facilities toward the repair, reconstruction, or replacement of the Subject Facilities and SCE incurs additional capital costs (including any deductibles) beyond such insurance proceeds for the repair, reconstruction or replacement of the Subject Facilities, the Lessee Percentage Interest shall be adjusted pursuant to Section 3.5 in respect of such additional capital costs only (and not in respect of the insurance proceeds).

Section 9.2 Indemnity. A Party shall not be liable to the other Party for any injury to person or death or damage to property to the extent caused by or arising as a result of the gross negligence or willful misconduct of such other Party, its officers, employees, representatives, advisors, contractors or agents, or to the extent caused by or arising as a result of the gross negligence or willful misconduct of any other person (other than such first Party or its employees, contractors or agents) entering upon the Subject Facilities site under invitation of such other Party, and such other Party agrees to indemnify, defend and hold harmless such first Party and its successors, assigns, officers, employees, representatives, advisors, contractors and agents from any liability, loss, claim, damage, cost or expense suffered or incurred by such first Party by reason of any such damage, injury or death.

ARTICLE X. CASUALTY; CONDEMNATION; FORCE MAJEURE

Section 10.1 Condemnation. In the event all or a portion of the Subject Facilities are temporarily or permanently condemned, each Party shall be entitled to separately apply for and claim all compensation from the condemning entity and be entitled to whatever it is awarded.

Section 10.2 Casualty. In the event of a casualty affecting the Subject Facilities, SCE shall seek to restore service on the Subject Facilities consistent with its general practices applicable to its transmission system.

Section 10.3 Force Majeure. Notwithstanding anything in this Lease to the contrary, if a Party's performance is impacted by Force Majeure, the affected Party shall be excused from performing its affected obligations under this Lease (other than the obligation to make payments with respect to obligations arising prior to the event of Force Majeure) and shall not be liable for damages or other liabilities due to its failure to perform, during any period (but no longer than six (6) months) that such Party is unable to perform due to an event of Force Majeure; provided, however, that the Party declaring an event of Force Majeure shall: (a) act expeditiously to resume performance; and (b) exercise all commercially reasonable efforts to mitigate or limit damages to the other Party. A Party unable to perform under this Lease due to an event of Force Majeure shall: (i) provide prompt written notice of such event of Force Majeure to the other Party, which shall include an estimate of the expected duration of the Party's inability to perform due to the event of Force Majeure; and (ii) provide prompt notice to the other Party when performance resumes.

ARTICLE XI. ASSIGNMENT AND SUBLETTING

Section 11.1 No Sublet. Lessee shall not sublet all or any portion of the Lessee Transfer Capability.

Section 11.2 Assignment. Neither Party shall assign this Lease, or its rights or obligations hereunder, without the prior written consent of the other Party, which consent may be granted or withheld in its sole discretion; provided, however, that no such consent shall be required for (a) subject to Section 11.3, a collateral assignment of, or creation of a security interest in, this Lease in connection with any financing or refinancing of the Subject Facilities or the Rent due hereunder, or any foreclosure sale or deed in lieu of foreclosure in connection with the exercise of remedies under such collateral assignment or security interest, or (b) in the case of SCE, an assignment in connection with the merger of SCE with, or the acquisition of substantially all of the transmission assets of SCE by, an entity with an equal or greater credit rating and with the legal authority and operational ability to satisfy the obligations of SCE. For purposes hereof, the transfer of more than fifty percent (50%) of the equity ownership or voting interest of any Party (or any parent entity holding directly or indirectly at least fifty percent (50%) of the equity ownership or voting interest of such Party) to a person that is not an Affiliate of such Party shall also constitute an assignment of this Lease requiring the other Party's prior written consent except in the case where the resulting controlling person is an entity that holds an ownership interest in Lessee as of the Effective Date. In addition, any transfer of an ownership interest in Lessee (other than a transfer to an entity that holds an ownership interest in Lessee as of the Effective Date) shall also constitute an assignment of this Lease requiring SCE's prior written consent. Notwithstanding anything in this Lease to the contrary, no consent shall be required for an assignment (including a transfer of ownership interests in the Lessee) to the lenders of Lessee or their nominee on enforcement of any security interest.

Section 11.3 Form of Consent to Collateral Assignment. In connection with any financing or refinancing of the Lessee Transfer Capability, Lessee and SCE shall, and Lessee shall cause each lender to, enter into a consent to collateral assignment (the "Collateral Assignment Agreement") substantially in the form attached as Exhibit D hereto. Lessee agrees that it will not take any of the actions described in Section 1.5 of the Collateral Assignment Agreement without the prior written consent of the assignee thereunder, and that it will deliver to such assignee a copy of all notices required to be delivered to the assignee by SCE pursuant to Section 1.9 of the Collateral Assignment Agreement. [*Note to form: Conform to final version of Collateral Assignment Agreement*]. SCE shall provide any estoppels and other acknowledgements regarding this Lease as Lessee's lenders may reasonably request. If Lessee's lenders seek clarifications, amendments or modifications of this Lease, the Parties will exercise good faith efforts to accommodate such requests; provided, however, that no Party is hereby committing itself to any such clarification, amendment or modification of this Lease which, in such Party's sole discretion, would impair or interfere with the benefits that a Party expects to derive from its participation in the Project.

Section 11.4 Right of First Refusal. Except (a) in connection with a collateral assignment under clause (a) of Section 11.2 above or (b) in connection with any foreclosure sale or deed in lieu of foreclosure in connection with the exercise of remedies under such collateral assignment, SCE shall have the right of first refusal with respect to any proposed assignment by Lessee of all or any portion of its interest in this Lease (including any deemed assignment resulting from any change of control of a Party or transfer of ownership interest in Lessee pursuant to Section 11.2 above excluding, in either case, any assignment or transfer to an entity that holds an ownership interest in Lessee as of the Effective Date). In the event Lessee receives a bona fide offer from an unaffiliated third party to purchase all or any portion of the interest of Lessee in this Lease that Lessee desires to accept, Lessee shall provide SCE with a copy of the bona fide third party purchase offer within five (5) Business Days following receipt thereof. For a period of ninety (90) days following SCE's receipt of the bona fide third party purchase offer, SCE shall have the right to purchase such interest as set forth in the offer on the same terms and conditions set forth in such offer and to conduct due diligence regarding the contemplated purchase. In the event that SCE elects to exercise its right, SCE and Lessee shall close the purchase and sale of the interest in this Lease upon the terms and conditions contained in the offer. In the event that SCE elects not to exercise its right and subject to SCE's prior written consent under Section 11.2 above, Lessee shall be free to sell such interest to the third party that made the offer on terms and conditions no more favorable to Lessee than those contained in the offer. In the event that such sale is not consummated within twenty-four (24) months following SCE's failure to exercise this right of first refusal, then SCE's right of first refusal shall be revived with respect to seek sale. In the event that there is a material revision in any offer in favor of any prospective purchaser, then SCE's right of first refusal shall be revived so that SCE again has the right of first refusal to purchase the interest in this Lease on the revised terms.

ARTICLE XII. DISPUTE RESOLUTION

Section 12.1 Intent of the Parties. The sole procedure to resolve any claim arising out of or relating to this Lease or any related agreement is the dispute resolution procedure set forth in this Article XII; provided, however, that either Party may seek a preliminary injunction or other provisional judicial remedy if such action is necessary to prevent irreparable harm or preserve the status quo, in which case both Parties nonetheless will continue to pursue resolution of the dispute by means of this procedure and nothing in this Section 12.1 shall restrict the rights of any party to file a complaint with the FERC under relevant provisions of the Federal Power Act.

Section 12.2 Management Negotiations. The Parties will attempt in good faith to resolve any controversy or claim arising out of or relating to this Lease or any related agreements by prompt negotiations between each Party's authorized representatives. If the matter is not resolved thereby, either Party's authorized representative may request in writing that the matter be referred to the designated senior officers of their respective companies that have corporate authority to settle the dispute. Within five (5) Business Days after such referral date (the "Referral Date"), each Party shall provide one another Notice confirming the referral and identifying the name and title of the senior officer who will represent such Party. Within five (5) Business Days after such Referral Date, the senior officers shall establish a mutually acceptable location and date to meet which shall not be greater than thirty (30) days after such Referral Date. After the initial meeting date, the senior officers shall meet, as often as they reasonably deem necessary, to exchange relevant information and to attempt to resolve the dispute. All communication and writing exchanged between the Parties in connection with these negotiations shall be confidential and shall not be used or referred to in any subsequent binding adjudicatory process between the Parties. If the matter is not resolved within forty-five (45) days of such Referral Date, or if either Party refuses or does not meet within the thirty (30) day period specified above, either Party may initiate arbitration of the controversy or claim by providing notice of a demand for binding arbitration before a single, neutral arbitrator ("Arbitrator") at any time thereafter.

Section 12.3 Arbitration.

Section 12.3.1 Arbitrator. The Parties will cooperate with one another in selecting the Arbitrator from the panel of neutrals from Judicial Arbitration and Mediation Services, Inc. ("JAMS"), its successor, an any other mutually acceptable non-JAMS Arbitrator sixty (60) days after notice of the demand for arbitration and shall further cooperate in scheduling the arbitration to commence no later than one hundred eighty (180) days from the date of notice of the demand. If, notwithstanding their good faith efforts, the Parties are unable to agree upon a mutually-acceptable Arbitrator in accordance with the preceding sentence, the Arbitrator shall be appointed as provided for in California Code of Civil Procedure Section 1281.6. To be qualified as an Arbitrator, each candidate must be a retired judge of a trial court of any state or federal court, or retired justice of any appellate or supreme court. Upon notice of a Party's demand for binding arbitration, such dispute submitted to arbitration, including the determination of the scope or applicability of this Lease to arbitrate, shall be determined by binding arbitration before the Arbitrator, in accordance with the laws of the State of California, without regard to principles of conflicts of laws.

Section 12.3.2 Rules and Procedures. Except as provided for herein, the arbitration shall be conducted by the Arbitrator in accordance with the rules and procedures for arbitration of complex business disputes for the organization with which the Arbitrator is associated. Absent the existence of such rules and procedures, the arbitration shall be conducted in accordance with the California Arbitration Act, California Code of Civil Procedure Section 1280 et seq. and California procedural law (including the Code of Civil Procedure, Civil Code, Evidence Code and Rules of Court, but excluding local rules). Notwithstanding the rules and procedures that would otherwise apply to the arbitration, and unless the Parties agree to a different arrangement, the place of the arbitration shall be in Los Angeles County, California.

Section 12.3.3 Discovery. Notwithstanding the rules and procedures that would otherwise apply to the arbitration, and unless the Parties agree to a different arrangement, discovery will be limited as follows:

(a) Before discovery commences, the Parties shall exchange an initial disclosure of all documents and percipient witnesses which they intend to rely upon or use at any arbitration proceeding (except for documents and witnesses to be used solely for impeachment);

(b) The initial disclosure will occur within thirty (30) days after the initial conference with the Arbitrator or at such time as the Arbitrator may order;

(c) Discovery may commence at any time after the Parties' initial disclosure;

(d) The Parties will not be permitted to propound any interrogatories or requests for admissions;

(e) Discovery will be limited to twenty-five (25) document requests (with no subparts), three (3) lay witness depositions, and three (3) expert witness depositions (unless the Arbitrator holds otherwise following a showing by the Party seeking the additional documents or depositions that the documents or depositions are critical for a fair resolution of the dispute or that a Party has improperly withheld documents);

(f) Each Party is allowed a maximum of three (3) expert witnesses, excluding rebuttal experts;

(g) Within sixty (60) days after the initial disclosure, or at such other time as the Arbitrator may order, the Parties shall exchange a list of all experts upon which they intend to rely at the arbitration proceeding;

(h) Within thirty days (30) after the initial expert disclosure, the Parties may designate a maximum of two (2) rebuttal experts;

(i) Unless the Parties agree otherwise, all direct testimony will be in form of affidavits or declarations under penalty of perjury; and

(j) Each Party shall make available for cross examination at the arbitration hearing its witnesses whose direct testimony has been so submitted.

Section 12.3.4 Court Reporter. Unless otherwise agreed to by the Parties, all proceedings before the Arbitrator shall be reported and transcribed by a certified court reporter, with each Party to the dispute bearing an equal share of the court reporter's fees.

Section 12.3.5 Arbitration Decision. At the conclusion of the arbitration hearing, the Arbitrator shall prepare in writing and provide to the Parties a decision setting forth factual findings, legal analysis, and the reasons on which the Arbitrator's decision is based. The Arbitrator shall also have the authority to resolve claims or issues in advance of the arbitration hearing that would be appropriate for a California superior court judge to resolve in advance of trial. The Arbitrator shall not have the power to commit errors of law or fact, or to commit any abuse of discretion, that would constitute reversible error had the decision been rendered by a California superior court. The Arbitrator's decision may be vacated or corrected on appeal to a California court of competent jurisdiction for such error. The Arbitrator shall have no power to make an award or impose a remedy that is inconsistent with this Section 12.3. However, subject to this Section 12.3, the Arbitrator shall have the authority to grant any form of equitable or legal relief a party might recover in a court action. Judgment on the award may be entered in any court having jurisdiction.

Section 12.3.6 Prevailing Party. The Arbitrator shall, in any award, allocate all of the costs of the binding arbitration (other than each Party's individual attorneys' fees and costs related to the Party's participation in the arbitration, which fees and costs shall be borne by such Party), including the fees of the Arbitrator and any expert witnesses, against the Party who did not prevail. Until such award is made, however, the Parties shall share equally in paying the costs of the arbitration.

Section 12.4 Enforcement of Award. By execution and delivery of this Lease, each Party hereby (a) accepts and consents to the use of binding arbitration pursuant to the procedures described in this Article XII, and, solely for purposes of the enforcement of an arbitral award under this Section 12.4, to the jurisdiction of any court of competent jurisdiction, for itself and in respect of its property, and (b) waives, solely for purposes of the enforcement of an arbitral award under this Section 12.4, in respect of both itself and its property, all defenses it may have as to or based on jurisdiction, improper venue or forum non conveniens. Each Party hereby irrevocably consents to the service of process or other papers by the use of any of the methods and to the addresses set out for the giving of notices in Section 13.1 hereof. Nothing herein shall affect the right of each Party to serve such process or papers in any other manner permitted by law.

Section 12.5 Performance during Arbitration. While resolution of any dispute is pending, each Party shall continue to perform its obligations hereunder (unless such Party is otherwise entitled to suspend its performance hereunder or terminate this Lease in accordance with the terms hereof), and no Party shall refer or attempt to refer the matter in dispute to a court or other tribunal in any jurisdiction, except as provided in this Article XII.

ARTICLE XIII. MISCELLANEOUS

Section 13.1 Notices. Unless otherwise specified herein, all notices shall be in writing and delivered by hand, overnight courier or facsimile (provided a copy is also sent by overnight courier) to the applicable addresses below. Notice shall be effective in case of delivery by hand or facsimile on the next Business Day after it is sent, or in the case of delivery by overnight courier, on the later of the next Business Day after it is sent or on the first day after it is sent on which the overnight courier guarantees delivery. A Party may change its address for notices by providing notice of the same in accordance with this Section 13.1.

If to SCE:
Southern California Edison Company
2244 Walnut Grove Avenue
Rosemead, CA 91770
Attention: Treasurer
Fax: (626) 302-4510

With a copy to:
Southern California Edison Company
2244 Walnut Grove Avenue
Rosemead, CA 91770
Attention: General Counsel
Fax: (626) 302-3720

and

[Name and address of Lender]

If to Lessee:

Morongo Transmission LLC
c/o Morongo Band of Mission Indians
12700 Pumarra Rd.
Banning, CA 92220
Attention: Roger Meyer, CEO
Fax: (951) 849-5108

With copies to:

Forman & Associates
Attorneys at Law
4340 Redwood Highway,
Suite E352
San Rafael, CA 94903
Attention: George Forman
Fax: (415) 491-2313

and

Whalen LLP
19000 MacArthur Boulevard, Suite 600
Irvine, CA 92612
Attention: Michael Whalen
Fax: (714) 408-7446

and

[Name and address of Lender]

[Notice information to be confirmed.]

Section 13.2 Confidentiality. During the Term and for a period of three (3) years after the expiration the Term, the Parties shall keep confidential any confidential information relating to the Subject Facilities obtained from the other Party, and shall refrain from using, publishing or revealing such confidential information without the prior written consent of the Party whose confidential information the disclosing Party is seeking to disclose, unless: (a) compelled to disclose such document or information to a securities exchange or by judicial, regulatory or administrative process or other provisions of law; (b) such document or information is generally available to the public; (c) such document or information was available to the disclosing Party on a non-confidential basis; (d) such document or information was available to the disclosing Party on a non-confidential basis from a third-party; provided, however, that the disclosing Party does not know, and, by reasonable effort, could not know that such third-party is prohibited from transmitting the document or information to the receiving Party by a contractual, legal or fiduciary obligation; or (e) such document or information is necessary to support a rate case or other regulatory filing with a Governmental Authority; provided, however, that the Party disclosing such document or information must make reasonable efforts to maintain confidentiality with respect to any proprietary information.

Section 13.3 Public Relations. The Parties will cooperate in good faith with each other and, to the extent reasonable, seek mutual approval with respect to any public announcements regarding this Lease or the Subject Facilities.

Section 13.4 Governing Law. This Lease and obligations hereunder shall be governed by the applicable laws of the State of California, without regard to principles of conflicts of law.

Section 13.5 No Amendments or Modifications. This Lease shall not be amended, modified, terminated, discharged or supplemented, nor any provision hereof waived, unless mutually agreed to in writing by the Parties. If and to the extent that the CAISO Agreements are amended or modified such that a Party or the Parties can no longer comply with the terms of this Lease, the Parties shall negotiate in good faith to amend or modify this Lease to effectuate the same intent and essential purpose of this Lease as of the Effective Date in light of the CAISO Agreements' amendment or modification, and neither Party shall unreasonably refuse to agree to any such necessary modification that does not have an adverse impact on the Party to which a request for modification is made. In the event that any applicable law is amended or modified such that a Party or the Parties can no longer comply with the terms of this Lease, or the benefits received by or burdens imposed upon the Parties with respect to this Lease are substantially reduced or increased, as the case may be, the Parties shall negotiate in good faith to amend or modify this Lease to effectuate the same intent and essential purpose of this Lease, or to provide for the same essential benefits and burdens anticipated by the Parties with respect to this Lease, as of the Effective Date.

Section 13.6 Delay and Waiver. Except as otherwise provided in this Lease, no delay or omission to exercise any right, power or remedy accruing to the respective Parties hereto upon any breach or default of any other Party under this Lease shall impair any such right, power or remedy, nor shall it be construed to be a waiver of any such similar breach or default thereafter occurring, nor shall any waiver of any single breach or default be deemed a waiver of any other breach or default theretofore or thereafter occurring. Any waiver, permit, consent or approval of any kind or character of any breach or default under this Lease, or any waiver of any provision or condition of this Lease, must be in writing and shall be effective only to the extent specifically set forth in such writing.

Section 13.7 Entirety; Conflicts. This Lease, together with its exhibits, constitute the entire agreement between the Parties hereto. There are no prior or contemporaneous agreements or representations affecting the same subject matter other than those herein expressed. In the event of any conflicts or inconsistencies between the terms of this Lease and the DCA, the terms of this Lease shall govern and prevail.

Section 13.8 Relationship of the Parties. Except as otherwise set forth herein, this Lease shall not make any of the Parties partners or joint venturers one with the other, nor make any the agent of the others. Except as otherwise explicitly set forth herein, no Party shall have any right, power or authority to enter into any agreement or undertaking for, or act on behalf of, or to act as or be an agent or representative of, or to otherwise bind, the other Party. Notwithstanding anything to the contrary, no fiduciary duty or fiduciary relationship shall exist between the Parties.

Section 13.9 Good Faith. In carrying out its obligations and duties under this Lease, each Party shall have an implied obligation of good faith.

Section 13.10 Successors and Assigns. This Lease shall inure to the benefit of, and be binding upon, the Parties hereto and their respective successors and permitted assigns.

Section 13.11 Third Parties. This Lease is intended solely for the benefit of the Parties. Nothing in this Lease shall be construed to create any duty or liability to, or standard of care with reference to, any Person other than the Parties.

Section 13.12 Headings. The headings contained in this Lease are solely for the convenience of the Parties and should not be used or relied upon in any manner in the construction or interpretation of this Lease.

Section 13.13 Construction of Lease. Ambiguities or uncertainties in the wording of this Lease shall not be construed for or against any Party either on account of such Party having drafted or provided any language in this Lease or otherwise, and shall be construed in accordance with the fair meaning of this Lease.

Section 13.14 Counterparts. This Lease may be executed in one or more counterparts, each of which shall be deemed an original.

Section 13.15 No Personal Liability. Each action or claim of any Party arising under or relating to this Lease shall be made only against the other Party as a corporation or limited liability company, and any liability relating thereto shall be enforceable only against the assets of such Party. No Party shall seek to impose any liability relating to, or arising from, this Lease against any shareholder, manager, member, employee, officer or director of the other party. Notwithstanding anything in Section 13.11 or elsewhere in this Lease, each of such persons is an intended beneficiary of the mutual promises set forth in this section and shall be entitled to enforce the obligations of this section.

Section 13.16 Memorandum. Concurrently with the execution and delivery of this Lease, the Parties will execute a memorandum of this Lease in the form attached as Exhibit F hereto (the "Memorandum"), which Memorandum shall be recorded in the official real estate records of the counties in California in which the Subject Facilities are located. The provisions of this Lease will control with regard to any provisions of this Lease that may be in conflict with the Memorandum. Upon termination of this Lease, the Parties will execute an instrument evidencing such termination, which instrument shall also be recorded in such official real estate records.

Section 13.17 Payments to Lessee. All payments to be made by Lessor to Lessee under or by reason of this Lease shall be made directly to Lessee's lenders pursuant to the provisions of Section 2.1 of the Collateral Assignment Agreement. [*Note to form: Conform to final version of Collateral Assignment Agreement*].

[Signature page follows]

IN WITNESS WHEREOF, the Parties have signed this Lease as of the Effective Date.

SCE:

Southern California Edison Company, a California corporation

By: ____________________________
Name:
Title:

LESSEE:

Morongo Transmission LLC, a Delaware limited liability company

By: ____________________________
Name:
Title:

EXHIBIT A

ADDITIONAL RENT

(to be attached to final Lease)

EXHIBIT B

MODEL FOR SCE REPRESENTATIVE RATE

(to be attached to final Lease)

EXHIBIT C

ACCRUAL OF PREPAID RENT

(to be attached to final Lease)

EXHIBIT D

FORM OF CONSENT AND AGREEMENT

EXHIBIT D

FORM OF CONSENT AND AGREEMENT

This CONSENT AND AGREEMENT (this "Consent"), dated as of [ ], [ ] is by and among (i) SOUTHERN CALIFORNIA EDISON COMPANY, a California corporation ("SCE"), (ii) MORONGO TRANSMISSION LLC, a Delaware limited liability company (the "Assignor") and (iii) [ ] (the "Assignee"), [***Note: Insert description of collateral agent and any other administrative agent (if applicable) entering into document on behalf of the Assignor's Lenders***]

RECITALS

A. Assignor and SCE have entered into that certain Transfer Capability Lease, dated as of [ ], [ ] ("Assigned Agreement"), pursuant to which SCE will lease to the Assignor a portion of the Transfer Capability in the Subject Facilities (the "Project");

B. Assignor has entered into that certain [Credit Agreement, dated as of [ ], among the Assignor, the financial institutions party thereto and the Assignee] (the "[Credit Agreement]") [***Note: Insert description of primary financing document for Assignor***];

C. As collateral security for Assignor's obligations under the [Credit Agreement] and related agreements (collectively, the "Financing Documents"), Assignor has, among other things, assigned all of its right, title and interest in, to and under the Assigned Agreement and Assignor's owners have pledged their ownership interest in Assignor (the "Assigned Interest") to the Assignee pursuant to the [Security Documents] referred to in the [Credit Agreement]; and

D. It is a requirement under the [Credit Agreement] and the Assigned Agreement that SCE and the other parties hereto shall have executed and delivered this Consent;

AGREEMENT

NOW, THEREFORE, in consideration of the foregoing, and for other good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, and intending to be legally bound, the parties hereto hereby agree as follows:

SECTION 1. CONSENT TO ASSIGNMENT, ETC.

1.1 Consent and Agreement. SCE:

(a) hereby acknowledges notice of and consents to the assignment as collateral security to Assignee, for the benefit of the Secured Parties, of the Assigned Interest; and

(b) hereby acknowledges the right (but not the obligation) of Assignee in the exercise of its rights and remedies under the Financing Documents and upon delivery to SCE of a Default Notice (as defined below), to make all demands, give all notices, take all actions and exercise all rights of Assignor permitted under the Assigned Agreement (subject to SCE's defenses under the Assigned Agreement) and accepts any such exercise; provided, however, that, insofar as the Assignee exercises any of its rights under the Assigned Agreement or makes any claims with respect to payments or other obligations under the Assigned Agreement, the terms and conditions of the Assigned Agreement applicable to such exercise of rights or claims shall apply to Assignee to the same extent as to Assignor.

1.2 Assignor's Acknowledgement. Assignor hereby acknowledges and agrees that SCE is authorized to act in accordance with Assignee's instructions, and that SCE shall bear no liability to Assignor in connection therewith, including any liability for failing to act in accordance with Assignor's instructions.

1.3 Substitute Owner. Subject to Section 1.8, the parties agree that if Assignee notifies (such notice, a "Default Notice") SCE that an event of default has occurred and is continuing under the Financing Documents ("Event of Default") then, upon a judicial foreclosure sale, non-judicial foreclosure sale, deed in lieu of foreclosure or other transfer following a default under the Financing Documents, Assignee (or its designee) shall be substituted for Assignor (the "Substitute Owner") under the Assigned Agreement, and, subject to Section 1.8(b) below, SCE and Substitute Owner will recognize each other as counterparties under the Assigned Agreement and will continue to perform their respective obligations under the Assigned Agreement in favor of each other in accordance with the terms thereof. For purposes of the foregoing, SCE shall be entitled to assume that any such purported exercise is in accordance with the Financing Documents without independent investigation thereof.

1.4 Right to Cure. If Assignor defaults in the performance of any of its obligations under the Assigned Agreement, or upon the occurrence or non-occurrence of any event or condition under the Assigned Agreement which would immediately or with the passage of any applicable grace period or the giving of notice, or both, enable SCE to terminate or suspend its performance under the Assigned Agreement (each hereinafter a "default"), SCE will not terminate or suspend its performance under the Assigned Agreement until it first gives written notice of such default to Assignee and affords Assignee the right to cure such default within the applicable cure period under the Assigned Agreement. In addition, if Assignee gives SCE written notice prior to the expiration of the applicable cure period under the Assigned Agreement of Assignee's intention to cure such default (which notice shall include a reasonable description of the time required to cure such default) and is diligently proceeding to cure such default, Assignee shall have a period of 60 days (or, if such default is for failure by the Assignor to pay an amount to SCE which is due and payable under the Assigned Agreement, 15 days) from receipt of the notice of such default from SCE to cure such default, provided, however, that (a) if control of the Assignor or its assets is necessary to cure any such non-monetary default and Assignee has commenced foreclosure proceedings within 60 days after notice of the default and is diligently pursuing such foreclosure proceedings, Assignee will be allowed a reasonable time, not to exceed 180 days, to complete such proceedings and cure such default and (b) if Assignee is prohibited from curing any such non-monetary default by any process, stay or injunction issued by any governmental authority or pursuant to any bankruptcy or insolvency proceeding or other similar proceeding involving Assignor, then the time periods specified herein for curing a default shall be extended for the period of such prohibition, so long as Assignee is diligently pursuing removal of such process, stay or injunction. Assignee shall provide SCE with reports concerning the status of efforts to cure a default upon SCE's reasonable request.

1.5 No Amendments. To the extent permitted by applicable law, SCE agrees that it will not, without the prior written consent of Assignee, except as permitted under clause (ii) of the proviso of Section 11.2 of the Assigned Agreement, (a) enter into any material supplement, restatement, extension, amendment or modification of the Assigned Agreement, (b) enter into any assignment or novation of the Assigned Agreement with any natural person, corporation, trust, business trust, joint venture, joint stock company, association, company, limited liability company, partnership, Governmental Authority or other entity (a "Person"), (c) terminate, suspend or cancel its performance under the Assigned Agreement (except in accordance with Section 1.4) or (d) consent to or accept any termination or cancellation of the Assigned Agreement by Assignor.

1.6 Replacement Agreements. If the Assigned Agreement is terminated, rejected or otherwise invalidated as a result of any bankruptcy, insolvency, reorganization or similar proceeding affecting Assignor, its owner(s) or guarantor(s), SCE shall, subject to the receipt of required regulatory approvals, enter into a new agreement with Assignee or its designee ("Replacement Owner") for the balance of the obligations under the Assigned Agreement remaining to be performed with Assignee (or its designee) having terms substantially the same as the terms of the Assigned Agreement with respect to the remaining term of the Assigned Agreement. Notwithstanding the execution and delivery of a new replacement agreement as described in this Section 1.6, to the extent SCE is or was otherwise entitled under the replaced Assigned Agreement, SCE may suspend performance of its obligations under such new contract, unless and until all defaults (other than noncurable nonmonetary defaults that are specific to Assignor) of Assignor under the replaced Assigned Agreement have been cured.

1.7 Transfer. Subject to Section 1.8(a), Assignee shall have the right to assign all of the Assigned Interest or all of its interest in a new agreement entered into pursuant to Section 1.6 to another Person pursuant to Section 11.2 of the Assigned Agreement (or such new agreement).

1.8 Assumption of Obligations.

(a) Transferee. Any transferee under Section 1.7 shall expressly assume in a writing reasonably satisfactory to SCE all of the obligations of Assignor or Assignee under the Assigned Agreement or such new agreement entered into pursuant to Section 1.6. Upon such assignment, the cure of any outstanding defaults, and payment of all other amounts due and payable to SCE in respect of the Assigned Agreement (or such new agreement), Assignee shall be released from any further liability under the Assigned Agreement or such new agreement.

(b) Substitute Owner. Subject to Section 1.8(c), any Substitute Owner pursuant to Section 1.3 shall be required to expressly assume in a writing reasonably satisfactory to SCE all of the obligations and liabilities of Assignor under the Assigned Agreement, including those that arose prior to the transfer; provided, that, (i) the obligations of such Substitute Owner shall be no more than those of Assignor under the Assigned Agreement, and (ii) such Substitute Owner shall not be required to perform any of Assignor's obligations under the Assigned Agreement that were unperformed at the time such Substitute Owner became a Substitute Owner (other than any obligations related to failure to pay amounts owed under the Assigned Agreement), provided, however, that the foregoing shall not limit SCE's right to reduce payments owed under the Assigned Agreement by reason of Assignor's failure to perform its obligations, or to exercise any rights or remedies under the Assigned Agreement with respect to any default by Assignor that remained uncured as of the time Substitute Owner became a Substitute Owner.

(c) No Liability. SCE acknowledges and agrees that neither Assignee nor any other secured party shall have any liability or obligation under the Assigned Agreement as a result of this Consent nor shall Assignee nor any other secured party be obligated or required to (a) perform any of Assignor's obligations under the Assigned Agreement, except as provided in Section 1.8(b), or (b) take any action to collect or enforce any claim for payment assigned under the Financing Documents.

1.9 Delivery of Notices. SCE shall deliver to Assignee and [***note: administrative agent to be inserted if applicable***], concurrently with the delivery thereof to Assignor, a copy of each notice, request or demand given by SCE to Assignor pursuant to the Assigned Agreement relating to (a) a default by Assignor under the Assigned Agreement, (b) any claim regarding force majeure by SCE under the Assigned Agreement, (c) any notice of dispute under the Assigned Agreement, (d) any notice of intent to terminate or any termination notice and (e) any matter that would require the consent of Assignee, [***note: administrative agent to be inserted if applicable***] or the Assignor's lenders pursuant to Section 1.5 or any other provision of this Consent. Assignee and [***note: administrative agent to be inserted if applicable***] acknowledge that delivery of such notice, request and demand shall satisfy SCE's obligation to give Assignee and [***note: administrative agent to be inserted if applicable***] a notice of default under Section 1.4.

1.10 Confirmations. SCE will, as and when reasonably requested by Assignee from time to time, confirm in writing matters relating to the Assigned Agreement (including the performance of same by Assignor), but without prejudice to any rights of SCE under the Assigned Agreement as between SCE and Assignor.

1.11 Exclusivity of Dealings. Except as provided in Sections 1.5 and 1.10, unless and until SCE receives a Default Notice, SCE shall deal exclusively with Assignor in connection with the performance of SCE's obligations under the Assigned Agreement. From and after such time as SCE receives a Default Notice and until a Substitute Owner is substituted for Assignor pursuant to Section 1.3 or the Assigned Agreement is transferred to a Person to whom the Project is transferred pursuant to Section 1.8, SCE shall, until Assignee confirms to SCE in writing that all obligation under the Financing Documents are no longer outstanding, deal exclusively with Assignee in connection with the performance of SCE's obligations under the Assigned Agreement, and SCE may irrevocably rely on instructions provided by Assignee in accordance therewith to the exclusion of those provided by Assignor or any other Person.

SECTION 2. PAYMENTS UNDER THE ASSIGNED AGREEMENT

2.1 Payments. Unless and until SCE receives written notice to the contrary from Assignee, SCE will make all payments to be made by it to Assignor under or by reason of the Assigned Agreement directly to Assignee at the address set forth in Section 5.1 for deposit into the following bank account: [ ], or directly to such other institution or in such other manner as may be specified by Assignee to SCE from time to time in writing. SCE, Assignor, and

Assignee acknowledge that SCE will be deemed to be in compliance with the payment terms of the Assigned Agreement to the extent that SCE makes payments in accordance with Assignee's instructions.

2.2 No Offset, Etc. All payments required to be made by SCE under the Assigned Agreement shall be made without any offset, recoupment, abatement, withholding, reduction or defense whatsoever, other than that expressly allowed by the terms of the Assigned Agreement or as otherwise permitted under applicable law.

SECTION 3. REPRESENTATIONS AND WARRANTIES OF SCE

SCE makes the following representations and warranties as of the date hereof in favor of Assignee.

3.1 Organization and Existence. SCE is a duly organized and validly existing corporation in good standing under the laws of the State of California and is qualified to transact business in all jurisdictions where the ownership of its properties or its operations require such qualification, except where the failure to so qualify would not have a material adverse effect on its financial condition, its ability to own its properties or transact its business, or to carry out the transactions and activities contemplated hereby.

3.2 Execution, Delivery and Enforceability. SCE has full corporate power and authority to carry on its business as now conducted, enter into, and to carry out its obligations under the Assigned Agreement and this Consent. The execution, delivery and performance by SCE of the Assigned Agreement and this Consent, and the consummation of the transactions and activities contemplated under the Assigned Agreement and this Consent, have been duly authorized by all necessary corporate action required on the part of SCE. The Assigned Agreement and this Consent has been duly and validly executed and delivered by SCE and constitute the valid and legally binding obligations of SCE, enforceable against SCE in accordance with their terms, except as such enforceability may be limited by bankruptcy, insolvency, reorganization, moratorium or other similar laws of general application relating to or affecting the enforcement of creditors' rights and by general equitable principles.

3.3 No Violation. None of the execution and delivery of the Assigned Agreement and this Consent, the compliance with any provision thereof, nor the consummation of the transactions and activities contemplated thereby will: (a) violate or conflict with, or result in a breach or default under, any provisions of the articles of incorporation or bylaws of SCE; or (b) violate or conflict with, or result in a breach or default under, any applicable law or regulation of any Governmental Authority, or any material agreement to which SCE is a party or by which its assets are bound, other than such violations, conflicts, breaches or defaults which, in the aggregate, would not have a material adverse effect on SCE's performance of its obligations under the Assigned Agreement or this Consent.

3.4 Authorization. Except as provided in the Assigned Agreement, no consent, order, authorization, waiver, approval or any other action, or registration, declaration or filing with, any Person, board or body, public or private (collectively "Approvals") is required to be obtained by SCE in connection with the execution, delivery or performance of the Assigned Agreement or the consummation of the transactions contemplated thereunder, which if not obtained will prevent SCE from performing its obligations hereunder or under the Assigned Agreement, except those that have been validly issued and are in full force and effect, and those which have been or will be duly applied for in the ordinary course

3.5 Litigation. To SCE's actual knowledge, except as disclosed to Assignee, there is no litigation, action, suit, proceeding or investigation pending or threatened against SCE before any court, administrative agency, arbitrator or governmental authority, which if adversely determined, individually or in the aggregate, (a) could reasonably be expected to modify or otherwise adversely affect the Approvals, or (b) questions the validity, binding effect or enforceability hereof or of the Assigned Agreement, any action taken or to be taken pursuant hereto or thereto or any of the transactions contemplated hereby or thereby.

3.6 No Default or Amendment. Neither SCE nor, to SCE's actual knowledge, the Assignor, is in default of any of its obligations under the Assigned Agreement. SCE and, to SCE's actual knowledge, the Assignor, has complied with all conditions precedent to the effectiveness of its obligations under the Assigned Agreement (except as disclosed to Assignee). To SCE's actual knowledge, no event or condition exists which would either immediately or with the passage of any applicable grace period or giving of notice, or both, enable either SCE or Assignor to terminate or suspend its obligations under the Assigned Agreement. The Assigned Agreement has not been amended, modified or supplemented in any manner except as set forth in the recitals hereto.

3.7 No Previous Assignments. SCE has no notice of, and has not consented to, any previous assignment by Assignor of all or any part of its rights under the Assigned Agreement, except as previously disclosed in writing and consented to by SCE.

SECTION 4. REPRESENTATIONS AND WARRANTIES OF ASSIGNOR

Assignor makes the following representations and warranties as of the date hereof in favor of SCE.

4.1 Execution, Delivery and Enforceability. Assignor has full power and authority to carry on its business as now conducted, enter into, and to carry out its obligations under this Consent. The execution, delivery and performance by Assignor of this Consent, and the consummation of the transactions and activities contemplated under this Consent, have been duly authorized by all necessary action required on the part of Assignor. This Consent has been duly and validly executed and delivered by Assignor and constitute the valid and legally binding obligations of Assignor, enforceable against Assignor in accordance with its terms, except as such enforceability may be limited by bankruptcy, insolvency, reorganization, moratorium or other similar laws of general application relating to or affecting the enforcement of creditors' rights and by general equitable principles.

4.2 Authorization. Except as provided in the Assigned Agreement, no Approval is required to be obtained by Assignor in connection with the execution, delivery or performance of the Assigned Agreement or the consummation of the transactions contemplated thereunder, which if not obtained will prevent Assignor from performing its obligations hereunder or under the Assigned Agreement, except those that have been validly issued and are in full force and effect, and those which have been or will be duly applied for in the ordinary course

4.3 Litigation. To Assignor's knowledge, there is no litigation, action, suit, proceeding or investigation pending or threatened against Assignor before any court, administrative agency, arbitrator or governmental authority, which if adversely determined, individually or in the aggregate, (a) could reasonably be expected to modify or otherwise adversely affect the Approvals, or (b) questions the validity, binding effect or enforceability hereof or of the Assigned Agreement, any action taken or to be taken pursuant hereto or thereto or any of the transactions contemplated hereby or thereby.

4.4 No Default or Amendment. Neither Assignor nor, to Assignor's knowledge, SCE, is in default of any of its obligations under the Assigned Agreement. Assignor and, to Assignor's knowledge, SCE, has complied with all conditions precedent to the effectiveness of its obligations under the Assigned Agreement (except as disclosed to Assignee). To Assignor's knowledge, no event or condition exists which would either immediately or with the passage of any applicable grace period or giving of notice, or both, enable either the SCE or Assignor to terminate or suspend its obligations under the Assigned Agreement. The Assigned Agreement has not been amended, modified or supplemented in any manner except as set forth in the recitals hereto.

4.5 No Previous Assignments. Assignor has not previously assigned all or any part of its rights under the Assigned Agreement.

[***Note: Estoppels, acknowledgments, clarifications, amendments or modifications to the Lease to be included here if applicable in accordance with Section 11.3 of the Lease.***]

SECTION 5. MISCELLANEOUS

5.1 Notices. All notices and other communications hereunder shall be in writing, shall be deemed given upon receipt thereof by the party or parties to whom such notice is addressed, shall refer on their face to the Assigned Agreement (although failure to so refer shall not render any such notice or communication ineffective), shall be sent by first class mail, by personal delivery or by a nationally recognized courier service, and shall be directed (a) if to SCE or Assignor, in accordance with Section 13.1 of the Assigned Agreement, (b) if to Assignee, to [***Insert***], and (d) to such other address or addressee as any such party may designate by notice given pursuant hereto.

5.2 Governing Law; Submission to Jurisdiction.

(a) THIS CONSENT SHALL BE CONSTRUED IN ACCORDANCE WITH, AND THIS CONSENT AND ALL MATTERS ARISING OUT OF THIS CONSENT AND THE TRANSACTIONS CONTEMPLATED HEREBY SHALL BE GOVERNED BY, THE LAW OF THE STATE OF CALIFORNIA WITHOUT REGARD TO ANY CONFLICTS OF LAWS PROVISIONS THEREOF THAT WOULD RESULT IN THE APPLICATION OF THE LAW OF ANOTHER JURISDICTION.

(b) Any legal action or proceeding with respect to this Consent and any action for enforcement of any judgment in respect thereof may be brought in the courts of the State of California or of the United States of America for the Central District of California, and, by execution and delivery of this Consent, each party hereby accepts for itself and in respect of its property, generally and unconditionally, the non-exclusive jurisdiction of the aforesaid courts and appellate courts from any appeal thereof. Each party further irrevocably consents to the service of process out of any of the aforementioned courts in any such action or proceeding by the mailing of copies thereof by registered or certified mail, postage prepaid, to its notice address provided pursuant to Section 5.1 hereof. Each party hereby irrevocably waives any objection which it may now or hereafter have to the laying of venue of any of the aforesaid actions or proceedings arising out of or in connection with this Consent brought in the courts referred to above and hereby further irrevocably waives and agrees not to plead or claim in any such court that any such action or proceeding brought in any such court has been brought in an inconvenient forum. Nothing herein shall affect the right of any party to serve process in any other manner permitted by law.

5.3 Counterparts. This Consent may be executed in any number of counterparts and by the different parties hereto on separate counterparts, each of which when so executed and delivered shall be an original, but all of which shall together constitute one and the same instrument.

5.4 Headings Descriptive. The headings of the several sections and subsections of this Consent are inserted for convenience only and shall not in any way affect the meaning or construction of any provision of this Consent.

5.5 Severability. In case any provision in or obligation under this Consent shall be invalid, illegal or unenforceable in any jurisdiction, the validity, legality and enforceability of the remaining provisions or obligations, or of such provision or obligation in any other jurisdiction, shall not in any way be affected or impaired thereby.

5.6 Amendment, Waiver. Neither this Consent nor any of the terms hereof may be terminated, amended, supplemented, waived or modified except by an instrument in writing signed by SCE, [***note: administrative agent to be inserted if applicable***] and Assignee.

5.7 Termination. Each party's obligations hereunder are absolute and unconditional, and no party has any right, and shall have no right, to terminate this Consent or to be released, relieved or discharged from any obligation or liability hereunder until SCE has been notified by Assignee that all of the obligations under the Financing Documents shall have been satisfied in full or, with respect to the Assigned Agreement, its obligations under the Assigned Agreement have been fully performed.

5.8 Successors and Assigns. This Consent shall be binding upon each party and its permitted successors and assigns and shall inure to the benefit of the other parties, their respective designee(s) and assignee(s) and their respective successors and assigns, through a refinancing of the Project or otherwise. Each reference to a Person herein shall include such Person's permitted successors, designees and assigns.

5.9 Further Assurances. SCE hereby agrees to execute and deliver all such instruments and take all such action as may be necessary to effectuate fully the purposes of this Consent.

5.10 Waiver of Trial by Jury. TO THE EXTENT PERMITTED BY APPLICABLE LAW, THE PARTIES HEREBY IRREVOCABLY WAIVE ALL RIGHT OF TRIAL BY JURY IN ANY ACTION, PROCEEDING OR COUNTERCLAIM ARISING OUT OF OR IN CONNECTION WITH THIS CONSENT OR ANY MATTER ARISING HEREUNDER. EACH PARTY FURTHER WARRANTS AND REPRESENTS THAT IT HAS REVIEWED THIS WAIVER WITH ITS LEGAL COUNSEL, AND THAT IT KNOWINGLY AND VOLUNTARILY WAIVES ITS JURY TRIAL RIGHTS FOLLOWING CONSULTATION WITH LEGAL COUNSEL.

5.11 Entire Agreement. This Consent and any agreement, document or instrument attached hereto or referred to herein integrate all the terms and conditions mentioned herein or incidental hereto and supersede all oral negotiations and prior writings in respect to the subject matter hereof. In the event of any conflict between the terms, conditions and provisions of this Consent and any such agreement, document or instrument, the terms, conditions and provisions of this Consent shall prevail.

IN WITNESS WHEREOF, the parties hereto have caused this Consent and Agreement to be duly executed and delivered by their duly authorized officers as of the date first above written.

SCE:

SOUTHERN CALIFORNIA EDISON COMPANY,
a California corporation

By: ______________________________

Name:
Title:

ASSIGNOR:

MORONGO TRANSMISSION LLC,
a Delaware limited liability company

By: ____

Name:
Title:

ASSIGNEE:

[ ], as Assignee

By: ______________________________

Name:
Title:

ADMINISTRATIVE AGENT: [INSERT IF APPLICABLE]

[ ], as Administrative Agent

By: ______________________________________

Name:
Title:

EXHIBIT E

THE PROJECT AND SUBJECT FACILITIES

EXHIBIT E

THE PROJECT AND SUBJECT FACILITIES

"Project" means the West of Devers Upgrade Project, which consists of the tear down and rebuild of four existing 220 kV transmission lines, covering approximately 48 corridor miles, with new 220 kV transmission lines between the existing Devers Substation (located near Palm Springs) and El Casco Substation (located in Western Riverside County), Vista Substation (located in Grand Terrace), and San Bernardino Substation (located in San Bernardino), which transmission lines will replace existing 220 kV transmission lines that cross the Reservation. The Project includes upgrades to equipment in the Devers, El Casco, Vista, and San Bernardino substations, as well as installation of telecommunication facilities. Portions of the new transmission lines may consist of double circuit 220kV transmission lines, and portions may consist of four single-circuit 220 kV transmission lines.

“Subject Facilities” means the portion of the West of Devers Upgrade Project consisting of the newly constructed 220 kV transmission lines that will operate as network transmission facilities under the Operational Control of the CAISO, and that are eligible for cost recovery under the CAISO’s Transmission Access Charge. The Subject Facilities do not include any switchyard or substation facilities, subtransmission or distribution lines or facilities, telecommunications facilities, or the costs of removing existing facilities. Portions of the new transmission lines may consist of double circuit 220kV transmission lines, and portions may consist of four single-circuit 220 kV transmission lines.

EXHIBIT F

FORM OF MEMORANDUM OF LEASE

EXHIBIT F

FORM OF MEMORANDUM OF LEASE

THIS MEMORANDUM OF LEASE (this "Memorandum") is made as of ______, by and between Southern California Edison Company, a California corporation ("Lessor"), and Morongo Transmission, LLC, a Delaware limited liability company ("Lessee").

WITNESSETH:

1. Lease. Lessor and Lessee have entered into that certain unrecorded Transfer Capability Lease, dated as of the date hereof (the "Lease"), for lease of the Lessee Transfer Capability of the Subject Facilities. The Subject Facilities are constructed in part on easements and rights-of-way granted to Lessor by the United States of America, acting by and through the Superintendent, Southern California Agency, Bureau of Indian Affiars, Department of the Interior, pursuant to that certain recorded Grant of Easements and Rights-of-Way dated ____________, serial number _____. Undefined capitalized terms used herein shall have the meanings ascribed thereto in the Lease.

2. Term. The term of the Lease shall commence as of the date of the Lease and shall expire (unless otherwise earlier terminated pursuant to the Lease) at 11:59 p.m. Pacific time on the day before the 30th anniversary of such commencement date.

3. Right of First Refusal. Pursuant to Section 11.4 of the Lease, Lessor shall have the right of first refusal with respect to any proposed assignment by Lessee of all or any portion of its interest in the Lease, except in connection with (a) a collateral assignment of, or security interest in, the Lease under clause (i) of section 11.2 of the Lease or (b) any foreclosure sale or deed in lieu of foreclosure in connection with the exercise of remedies under such collateral assignment or security interest.

4. Incorporation of Lease. This memorandum incorporates herein all of the terms and provisions of the Lease as though fully set forth herein.

5. Memorandum of Lease. The purpose of this Memorandum is to give notice of the existence of the Lease and nothing contained herein shall be deemed or construed to in any way modify or otherwise affect any of the terms and conditions of the Lease or to create any inference about the characterization of the leasehold interest as real property or personalty. Further, nothing in the Lease or herein shall be deemed an assignment, in whole or in part, of any right or interest in the aforementioned Grant of Easements and Rights-of-Way, serial number ______. In the event of any inconsistency between the terms of the Lease and this Memorandum, the terms of the Lease shall prevail.

6. Counterparts. This Memorandum may be executed in multiple counterparts which taken together shall constitute a single original instrument.

[*Signature Pages Follow*]

IN WITNESS WHEREOF, the parties have executed this Memorandum as of the date first written above.

LESSOR:

SOUTHERN CALIFORNIA EDISON

COMPANY,

a California corporation

By: __________________________
Name:
Title:

LESSEE:

MORONGO TRANSMISSION LLC,
a Delaware limited liability company

By: __________________________
Name:
Title:

SCE REPRESENTATIVE RATE MODEL
WEST OF DEVERS UPGRADE PROJECT
REVENUE REQUIREMENT OVER 57 YEARS
LEVELIZED OVER 30 YEARS

A	B	C	D	E	F	G	H	I	J	K	L	
uts												
ansfer Capability (1)		$414,100,000										
ncluded in Prepaid Rent) (1) (2)		$0										
bt (2)		4.14%										
mmon Equity (2)		10.43%										
ome Tax Rate (2)		35.00%										
ne Tax Rate (2)		8.84%										
pital												
		Capital Ratio	Cost	WACC								
		50.00%	4.14%	2.07%								
quity		0.00%	0.00%	0.00%								
quity		50.00%	10.43%	5.22%								
				7.29%								
		1	2	3	4	5	6	7	8	9	10	
equirement	Total	Year-1	Year-2	Year-3	Year-4	Year-5	Year-6	Year-7	Year-8	Year-9	Year-10	Ye
n Expense	$414,100,000	$7,264,912	$7,264,912	$7,264,912	$7,264,912	$7,264,912	$7,264,912	$7,264,912	$7,264,912	$7,264,912	$7,264,912	$3
Common Equity	$425,033,389	$21,268,154	$20,414,072	$19,400,234	$18,462,538	$17,593,635	$16,786,893	$16,025,166	$15,281,854	$14,544,156	$13,811,700	$2
Preferred Equity	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
Debt	$168,709,322	$8,442,009	$8,102,997	$7,700,572	$7,328,371	$6,983,476	$6,663,254	$6,360,900	$6,065,856	$5,773,040	$5,482,305	$
ome Taxes	$228,871,786	$13,254,725	$10,820,490	$10,369,808	$9,866,103	$9,403,996	$8,974,547	$8,567,929	$8,169,050	$7,772,229	$7,378,251	$1
ne Taxes	$63,410,726	$3,347,765	$3,028,889	$2,886,871	$2,747,095	$2,618,024	$2,498,148	$2,384,850	$2,274,089	$2,164,072	$2,054,839	$
venue Requirement	$1,300,125,224	$53,577,565	$49,631,360	$47,622,398	$45,669,019	$43,864,044	$42,187,753	$40,603,758	$39,055,761	$37,518,410	$35,992,007	$8
nt Value (57 yrs)	$486,140,554	$51,726,545	$44,662,977	$39,945,121	$35,705,504	$31,965,620	$28,656,416	$25,707,669	$23,048,494	$20,637,775	$18,453,788	$1
l Annual Amount (30 yrs)	$40,303,847											

ned in Transfer Capability Lease, Article I, Section 1.1

nsfer Capability Lease, Article IV, Section 4.3.2(a)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	**CALCULATION OF REVENUE REQUIREMENT**																
2			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
3	**Revenue Requirement**	**Total**	**Year-1**	**Year-2**	**Year-3**	**Year-4**	**Year-5**	**Year-6**	**Year-7**	**Year-8**	**Year-9**	**Year-10**	**Year-11**	**Year-12**	**Year-13**	**Year-14**	**Year-15**
4																	
5	Depreciation Expense	414,100,000	7,264,912	7,264,912	7,264,912	7,264,912	7,264,912	7,264,912	7,264,912	7,264,912	7,264,912	7,264,912	7,264,912	7,264,912	7,264,912	7,264,912	7,264,912
6	Return on Common Equity	425,033,389	21,268,154	20,414,072	19,400,234	18,462,538	17,593,635	16,786,893	16,025,166	15,281,854	14,544,156	13,811,700	13,084,135	12,361,135	11,642,397	10,927,635	10,216,585
7	Return on Preferred Equity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	Return on Debt	168,709,322	8,442,009	8,102,997	7,700,572	7,328,371	6,983,476	6,663,254	6,360,900	6,065,856	5,773,040	5,482,305	5,193,511	4,906,529	4,621,239	4,337,527	4,055,289
9	Federal Income Taxes	228,871,786	13,254,725	10,820,490	10,369,808	9,866,103	9,403,996	8,974,547	8,567,929	8,169,050	7,772,229	7,378,251	6,986,877	6,597,935	6,211,263	5,826,709	5,444,133
10	State Income Taxes	63,410,726	3,347,765	3,028,889	2,886,871	2,747,095	2,618,024	2,498,148	2,384,850	2,274,089	2,164,072	2,054,839	1,946,333	1,838,506	1,731,311	1,624,708	1,518,657
11																	
12	Total Revenue Requirement	1,300,125,224	53,577,565	49,631,360	47,622,398	45,669,019	43,864,044	42,187,753	40,603,758	39,055,761	37,518,410	35,992,007	34,475,768	32,969,017	31,471,122	29,981,492	28,499,576
13	Net Present Value (57 yrs)	486,140,554	51,726,545	44,662,977	39,945,121	35,705,504	31,965,620	28,656,416	25,707,669	23,048,494	20,637,775	18,453,788	16,476,099	14,686,132	13,066,963	11,603,170	10,280,703
14	Levelized Annual Amount (30yrs)	$40,303,847															
15																	
16																	
17								Capital Ratio	Cost	WACC							
18						Debt		50.00%	4.14%	2.07%							
19						Preferred Equity		0.00%	0.00%	0.00%							
20						Common Equity		50.00%	10.43%	5.22%							
21										7.29%							
22																	

	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI
1																		
2	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
3	**Year-16**	**Year-17**	**Year-18**	**Year-19**	**Year-20**	**Year-21**	**Year-22**	**Year-23**	**Year-24**	**Year-25**	**Year-26**	**Year-27**	**Year-28**	**Year-29**	**Year-30**	**Year-31**	**Year-32**	**Year-33**
4																		
5	7,264,912	7,264,912	7,264,912	7,264,912	7,264,912	7,264,912	7,264,912	7,264,912	7,264,912	7,264,912	7,264,912	7,264,912	7,264,912	7,264,912	7,264,912	7,264,912	7,264,912	7,264,912
6	9,620,578	9,250,208	8,992,223	8,734,238	8,476,254	8,218,269	7,960,285	7,702,300	7,444,315	7,186,331	6,928,346	6,670,362	6,412,377	6,154,392	5,896,408	5,649,727	5,425,652	5,212,882
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	3,818,715	3,671,703	3,569,300	3,466,898	3,364,496	3,262,093	3,159,691	3,057,289	2,954,886	2,852,484	2,750,082	2,647,679	2,545,277	2,442,875	2,340,472	2,242,557	2,153,615	2,069,159
9	5,132,941	4,952,099	4,821,686	4,682,303	4,543,414	4,404,497	4,265,583	4,126,668	3,987,753	3,848,838	3,709,923	3,571,009	3,432,094	3,293,179	3,154,264	3,022,394	2,903,602	2,789,889
10	1,430,683	1,377,231	1,339,567	1,301,034	1,262,548	1,224,059	1,185,571	1,147,083	1,108,595	1,070,106	1,031,618	993,130	954,642	916,153	877,665	840,956	807,707	776,048
11																		
12	27,267,829	26,516,153	25,987,689	25,449,385	24,911,623	24,373,832	23,836,042	23,298,252	22,760,462	22,222,672	21,684,882	21,147,092	20,609,302	20,071,512	19,533,722	19,020,546	18,555,489	18,112,889
13	9,168,451	8,310,304	7,591,630	6,929,560	6,322,538	5,765,994	5,255,881	4,788,458	4,360,281	3,968,173	3,609,212	3,280,704	2,980,167	2,705,319	2,454,055	2,227,324	2,025,320	1,842,765
14																		
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	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA
1																		
2	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51
3	**Year-34**	**Year-35**	**Year-36**	**Year-37**	**Year-38**	**Year-39**	**Year-40**	**Year-41**	**Year-42**	**Year-43**	**Year-44**	**Year-45**	**Year-46**	**Year-47**	**Year-48**	**Year-49**	**Year-50**	**Year-51**
4																		
5	7,264,912	7,264,912	7,264,912	7,264,912	7,264,912	7,264,912	7,264,912	7,264,912	7,264,912	7,264,912	7,264,912	7,264,912	7,264,912	7,264,912	7,264,912	7,264,912	7,264,912	7,264,912
6	5,000,111	4,787,340	4,574,570	4,361,799	4,149,028	3,936,258	3,723,487	3,510,716	3,297,946	3,085,175	2,872,404	2,659,634	2,446,863	2,234,092	2,021,321	1,808,551	1,595,780	1,383,009
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	1,984,704	1,900,248	1,815,793	1,731,337	1,646,882	1,562,426	1,477,971	1,393,515	1,309,060	1,224,604	1,140,149	1,055,693	971,238	886,783	802,327	717,872	633,416	548,961
9	2,675,273	2,560,706	2,446,137	2,331,569	2,217,000	2,102,431	1,987,862	1,873,293	1,758,725	1,644,156	1,529,587	1,415,018	1,300,449	1,185,880	1,071,312	956,743	842,174	727,605
10	744,300	712,557	680,815	649,072	617,329	585,586	553,843	522,100	490,357	458,614	426,871	395,129	363,386	331,643	299,900	268,157	236,414	204,671
11																		
12	17,669,300	17,225,765	16,782,227	16,338,689	15,895,151	15,451,613	15,008,075	14,564,537	14,120,999	13,677,462	13,233,924	12,790,386	12,346,848	11,903,310	11,459,772	11,016,234	10,572,697	10,129,159
13	1,675,570	1,522,589	1,382,658	1,254,710	1,137,763	1,030,913	933,328	844,242	762,951	688,807	621,215	559,626	503,537	452,485	406,044	363,824	325,466	290,639
14																		
15																		
16																		
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	BB	BC	BD	BE	BF
1					
2	52	53	54	55	56
3	**Year-52**	**Year-53**	**Year-54**	**Year-55**	**Year-56**
4					
5	7,264,912	7,264,912	7,264,912	7,264,912	7,264,912
6	1,170,239	957,468	744,697	531,927	319,156
7	0	0	0	0	0
8	464,505	380,050	295,594	211,139	126,683
9	613,036	498,467	383,899	269,330	154,761
10	172,928	141,185	109,443	77,700	45,957
11					
12	9,685,621	9,242,083	8,798,545	8,355,007	7,911,469
13	259,041	230,394	204,444	180,955	159,714
14					
15					
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ATF INCOME TAX EXPENSE

WEST OF DEVERS UPGRADE

LETTER AGREEMENT

MARCH 14, 2013

SOUTHERN CALIFORNIA
EDISON
An EDISON INTERNATIONAL® Company

Kevin M. Payne
Vice President

TZ
Gerhart
Karin W
Mark STA
Christina Ful
Craig
Roger M
Michael M.

March 14, 2013

Robert Martin, Chairman
Morongo Band of Mission Indians
12700 Pumarra Road
Banning, CA 92220

Re: That certain Agreement Related to Grant Easements and Rights-of-Way for Electric Transmission Lines and Appurtenant Fiber-Optic Telecommunications Lines and Access Roads On and Across Lands of the Morongo Indian Reservation (the "Agreement") entered into November 27, 2012 by and between the Morongo Band of Mission Indians ("Morongo") and Southern California Edison Company ("SCE")

Dear Chairman Martin:

SCE greatly values its partnership with Morongo and wants to ensure that both parties have a common understanding on certain matters contained in the Agreement. To that end, this letter serves as documentation of the parties' understanding as to how the parties will proceed with (a) obtaining the Rights-of-Way ("ROW") described in the Agreement; (b) certain matters related to the 115 kV subtransmission line located on Right-of-Way 2 (as defined in the Agreement); and (c) Morongo's selection of tower design for the 220 kV towers. SCE respectfully requests that Morongo provide SCE with written confirmation that Morongo concurs with SCE on these issues by signing the acknowledgement below and returning this letter to SCE as soon as reasonably possible.

SCE will apply to the Bureau of Indian Affairs (the "BIA") for Rights-of-Way 1, 2 and 3 (as each is defined in the Agreement) and Morongo will consent to the BIA's granting of Rights-of-Way 1, 2, and 3 in April 2013. In the interest of expediting both BIA approval of the Federal Grant of Easements and Rights-of-Way and the process of obtaining the other approvals needed for construction of SCE's West of Devers Project ("Project") in Right-of-Way 4 as described in the Agreement, SCE will not apply for Right-of-Way 4 until SCE has successfully been granted a Certificate of Public Convenience and Necessity ("CPCN") from the California Public Utilities Commission (the "CPUC") to construct SCE's West of Devers Project. Once SCE receives its CPCN license from the CPUC, then Morongo will prepare the consent to the BIA's granting of Right-of-Way 4 to SCE in a reasonable amount of time and SCE will file it with the BIA. Once the SCE facilities on Right-of-Way 4 have been constructed and energized, SCE will remove any facilities which are no longer used and useful from Right-of-Way 3 and quitclaim its rights to that

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MAR 22 2013

portion of Right-of-Way 3 back to Morongo.

The route configuration of Right-of-Way 4 will be subject to environmental review by state and federal agencies, Federal Aviation Administration ("FAA") restrictions, and SCE's final engineering design. However, the parties have agreed that (a) Right-of-Way 4 will be one of the two routes depicted on the attached map, subject to minor modification, and (b) SCE shall include both of the potential Right-of-Way 4 routes as Project route alternatives in the Project's Proponent's Environmental Assessment ("PEA") for review by the CPUC on the CPCN application. The parties acknowledge that they need to agree upon a date by which if one of the route alternatives is not feasible due to FAA restrictions, SCE and Morongo will advocate to the CPUC that the other route should be selected as Right-of-Way 4 and the preferred route because the other is infeasible.

Lastly, the Agreement requires SCE to consult with Morongo concerning the potential relocation and/or modification of the 115 kV subtransmission line located on Right-of-Way 2 and the design of any new or replacement transmission line towers. Morongo has chosen not to seek relocation and/or modification of the 115 kV transmission line.

Additionally, Morongo has chosen a combination of tubular steel poles and lattice steel towers for the Project's four 220 kV circuits traversing the Morongo reservation. Subject to site-specific engineering constraints, the former will be utilized in the segment between the western boundary of the Reservation and approximately two miles to the East, and the latter will be utilized in other portions of the corridor. SCE will prepare its PEA and design the Project consistent with these choices.

Thank you for your attention to these very important issues. As requested above, please sign below to confirm Morongo's concurrence with the statements and plan set forth in this letter and returned the executed letter to me at your earliest convenience.

We look forward to working with you on this matter.

Best regards,

Km Payne

Kevin Payne
Vice President, Engineering & Technical Services
Southern California Edison Company

cc: George Forman, Esq.
Karen Woodard

Acknowledged and Agreed:

MORONGO BAND OF MISSION INDIANS

By: ______________________

[illegible] Motion DIS
George F.

Distribution:
Roger M.
Shari
Marti St. A.
Christina
Sharron

EXECUTIVE

MORONGO BAND OF MISSION INDIANS

Motion Number # 03211303

BE IT KNOWN: The Morongo Band of Mission Indians, a Sovereign Indian Nation, recognized by the United States of America and acting through its duly elected officials, the Tribal Council, does hereby certify the passage of the following:

On March 21, 2013

A Motion by: Charles Martin Seconded by: Damon Sandoval

Stated as: Motion to authorize the Chairman to countersign the letter from SCE Vice President to the Pa
concurring on SCE plan to implement the rights of way

☐ Tuesday Council Mtg. ☐ Tuesday Work Session. ☐ Special Mtg. ☐ General Membership Mtg. ☐ Government Mtg.
The Motion was presented and passed during a ☐ Telephone Poll

As a result, the following action is to be taken:
Disburse from: ☐ Tribal Accounting ☐ MCRS Accounting

The recorded and signed vote appears below:

		Signatures		
Council Member:	Mary Ann Andreas (VC)	Mary Ann Andreas	Vote:	yes
Council Member:	Thomas E. Linton		Vote:	out
Council Member:	Brian Lugo	Brian Lugo	Vote:	yes
Council Member:	Charles Martin	Charles Martin	Vote:	yes
Council Member:	Damon Sandoval		Vote:	yes
Council Member:	Joletta G.Tsosie		Vote:	out
Chairperson:	Chairman Robert Martin			Chair

Recording Secretary

Rev 07 01 09

APPENDIX J-5 – ADDITIONAL MATERIALS PROVIDED FOR A COMPLETE RECORD OF PROCEEDINGS

WEST OF DEVERS UPGRADE

LETTER AGREEMENT

MAY 10, 2013

SOUTHERN CALIFORNIA
EDISON®
An EDISON INTERNATIONAL® Company

Kevin M. Payne
Vice President

May 10, 2013

Chairman Robert Martin

The Morongo Band of Mission Indians
12700 Pumarra Road
Banning, CA 92220

Re: Southern California Edison Company's ("SCE") Submittal of Notice of Construction or Alteration (Form 7460-1) to the Federal Aviation Administration ("FAA") for Structures Within the Option 1 Route Alternative of Right-of-Way 4

Dear Chairman Martin:

As described in our letter agreement dated March 14, 2013 ("the Letter Agreement"), SCE will include both of the potential Right-of-Way 4 routes as project route alternatives in its Proponent's Environmental Assessment for review by the California Public Utilities Commission ("CPUC") in the West of Devers Certificate of Public Convenience and Necessity ("CPCN") application. On May 8, 2013, pursuant to FAA regulations, SCE submitted a Notice of Construction or Alteration (Form 7460-1) for the fifty-four new structures near the Banning Airport, including thirty-four structures within the Right-of-Way 4 Option 1 route alternative. A copy of SCE's submittal to the FAA (which is composed of the FAA Form 7460-1 for each of the fifty-four structures) is enclosed for Morongo's reference.

SCE has evaluated all of the engineering alternatives for siting the four West of Devers 220 kV transmission lines within the proposed Option 1 alignment. Even if SCE engineered the towers in the best possible configuration with regard to FAA restrictions, the towers nonetheless may not be constructible in a manner that is consistent with FAA regulations due to their proximity to the Banning Airport. SCE has committed to the CPUC that SCE will follow all FAA recommendations for its transmission lines. In recent SCE transmission line projects, issues relating to FAA recommendations have caused delays of over a year. As such, if the FAA determines that the proposed towers are not constructible in a manner that is consistent with FAA regulations within the Option 1 route alternative, this route alternative would only be a viable option if the Banning Airport is closed. As agreed upon in the Letter Agreement, SCE will contact Morongo staff to set up a meeting to discuss and agree upon a date by which, if one of the route alternatives is deemed not feasible due to FAA restrictions, SCE and Morongo will

1 Innovation Way
Pomona, CA 91768
909-274-1801
Fax 909-274-1114

advocate to the CPUC that the other route should be selected as Right-of-Way 4 due to the FAA infeasibility.

Thank you for your attention to these very important issues. We look forward to continuing to work with you on this matter.

Best regards,

Kevin Payne

Kevin Payne
Vice President, Engineering & Technical Services
Southern California Edison Company

cc: Roger Meyer
George Forman, Esq.
Karen Woodard

APPENDIX J-6 – ADDITIONAL MATERIALS PROVIDED FOR A COMPLETE RECORD OF PROCEEDINGS

WEST OF DEVERS UPGRADE

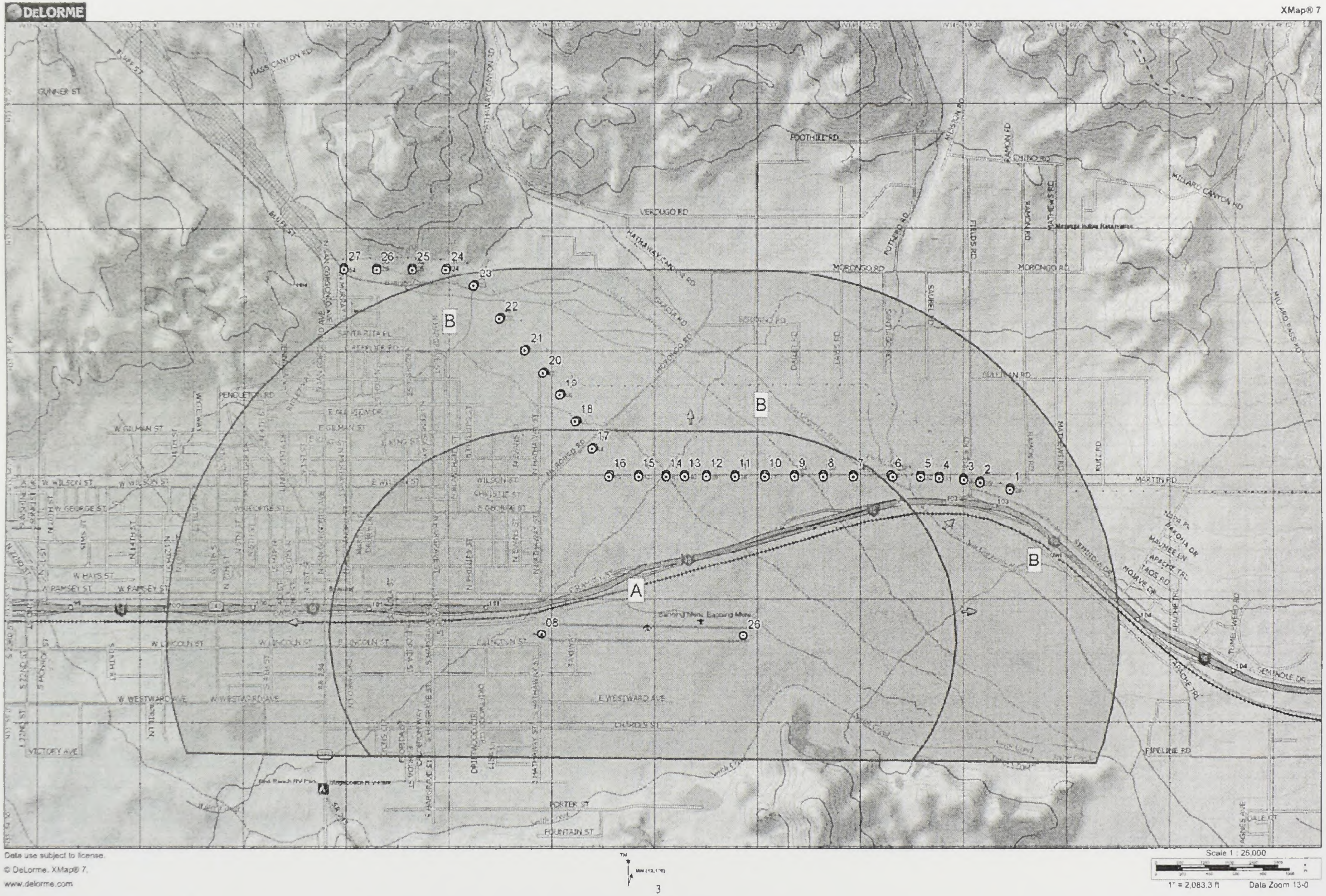
LETTER ATTACHMENT FAA FILING DATA

WEST OF DEVERS Segment 5 Option 1 Structures for FAA 7460-1 Filing

GEO ID	Structure ID	Structure Type	Latitude (DMS)	Longitude (DMS)	Site Elevation (SE) ft	Structure Height (AGL) ft	Total Height (AMSL) ft	Exceeds Surface by (ft)	City	Aeronautical Study #	Date Filed	FAA Determination / Filing Status	Action Require d	Expiration Date
1	D-EC 71R (92)	LST	33-55-56.81	116-49-16.46	2074	152	2226	n/a	Banning	2013-AWP-2650	5/8/2013	WIP		
2	D-EC 71Q (91A)	LST	33-55-58.54	116-49-25.10	2072	155	2227	n/a	Banning	2013-AWP-2651	5/8/2013	WIP		
3	D-EC 71P-T5P-1 (91)	T5P	33-55-59.19	116-49-29.93	2079	125	2204	n/a	Banning	2013-AWP-2669	5/8/2013	WIP		
4	D-EC 71O-T5P-1 (90A)	T5P	33-55-59.60	116-49-37.05	2085	125	2210	n/a	Banning	2013-AWP-2670	5/8/2013	WIP		
5	D-EC 71N-T5P-1 (90)	T5P	33-55-59.92	116-49-42.47	2092	120	2212	n/a	Banning	2013-AWP-2671	5/8/2013	WIP		
6	D-EC 71M-T5P-1 (89)	T5P	33-55-59.97	116-49-51.08	2102	125	2227	n/a	Banning	2013-AWP-2672	5/8/2013	WIP		
7	D-EC 71L-T5P-1 (88)	T5P	33-55-59.98	116-50-02.07	2122	135	2257	n/a	Banning	2013-AWP-2673	5/8/2013	WIP		
8	D-EC 71K-T5P-1 (87)	T5P	33-56-00.01	116-50-10.79	2138	130	2268	n/a	Banning	2013-AWP-2674	5/8/2013	WIP		
9	D-EC 71J-T5P-1 (86)	T5P	33-56-00.00	116-50-19.17	2154	125	2279	n/a	Banning	2013-AWP-2675	5/8/2013	WIP		
10	D-EC 71I-T5P-1 (85A)	T5P	33-56-00.00	116-50-27.81	2177	130	2307	n/a	Banning	2013-AWP-2676	5/8/2013	WIP		
11	D-EC 71H-T5P-1 (85)	T5P	33-56-00.01	116-50-36.48	2199	130	2329	n/a	Banning	2013-AWP-2677	5/8/2013	WIP		
12	D-EC 71G-T5P-1 (84)	T5P	33-56-00.03	116-50-44.85	2216	125	2341	n/a	Banning	2013-AWP-2678	5/8/2013	WIP		
13	D-EC 71F-T5P-1 (838)	T5P	33-56-00.03	116-50-51.24	2237	120	2357	n/a	Banning	2013-AWP-2679	5/8/2013	WIP		
14	D-EC 71E-T5P-1 (83A)	T5P	33-56-00.03	116-50-56.61	2250	104	2354	n/a	Banning	2013-AWP-2680	5/8/2013	WIP		
15	D-EC 71D-T5P-1 (83)	T5P	33-56-00.02	116-51-04.71	2272	135	2407	n/a	Banning	2013-AWP-2681	5/8/2013	WIP		
16	D-EC 71C-T5P-1 (82)	T5P	33-56-00.03	116-51-13.02	2293	125	2418	n/a	Banning	2013-AWP-2682	5/8/2013	WIP		
17	D-EC 71B-T5P-1 (81A)	T5P	33-56-06.68	116-51-17.77	2327	145	2472	n/a	Banning	2013-AWP-2683	5/8/2013	WIP		
18	D-EC 71A-T5P-1 (81)	T5P	33-56-13.11	116-51-22.68	2354	145	2499	n/a	Banning	2013-AWP-2684	5/8/2013	WIP		
19	D-EC 71-T5P-1 (80)	T5P	33-56-19.46	116-51-27.24	2384	125	2509	n/a	Banning	2013-AWP-2685	5/8/2013	WIP		
20	D-EC 70-T5P-1 (79A)	T5P	33-56-25.09	116-51-32.16	2412	130	2542	n/a	Banning	2013-AWP-2686	5/8/2013	WIP		
21	D-EC 69 (79)	LST	33-56-30.52	116-51-37.54	2443	155	2598	n/a	Banning	2013-AWP-2652	5/8/2013	WIP		
22	D-EC 68 (78)	LST	33-56-38.21	116-51-44.89	2475	155	2630	n/a	Banning	2013-AWP-2653	5/8/2013	WIP		
23	D-EC 67 (77)	LST	33-56-46.14	116-51-52.49	2507	143	2650	n/a	Banning	2013-AWP-2654	5/8/2013	WIP		
24	D-EC 66 (D-EC 71)	LST	33-56-50.31	116-52-00.70	2568	122	2690	n/a	Banning	2013-AWP-2655	5/8/2013	WIP		
25	D-EC 65	LST	33-56-50.32	116-52-10.72	2659	122	2781	n/a	Banning	2013-AWP-2656	5/8/2013	WIP		
26	D-EC 64	LST	33-56-50.34	116-52-21.15	2603	140	2743	n/a	Banning	2013-AWP-2657	5/8/2013	WIP		
27	D-EC 63 (73)	LST	33-56-50.44	116-52-30.69	2638	152	2790	n/a	Banning	2013-AWP-2658	5/8/2013	WIP		
28	D-V 168Z (31)	LST	33-55-56.31	116-49-16.51	2072	170	2242	n/a	Banning	2013-AWP-2659	5/8/2013	WIP		
29	D-V 168Y (30A)	LST	33-55-58.06	116-49-25.20	2071	149	2220	n/a	Banning	2013-AWP-2660	5/8/2013	WIP		
30	D-V 168X-T5P-1 (30)	T5P	33-55-58.70	116-49-30.00	2078	130	2208	n/a	Banning	2013-AWP-2687	5/8/2013	WIP		

WEST OF DEVERS Segment 5 Option 1 Structures for FAA 7460-1 Filing

GEO ID	Structure ID	Structure Type	Latitude (DMS)	Longitude (DMS)	Site Elevation (SE) ft	Structure Height (AGL) ft	Total Height (AMSL) ft	Exceeds Surface by (ft)	City	Aeronautical Study #	Date Filed	FAA Determination / Filing Status	Action Required	Expiration Date
31	D-V 168W-T5P-1 (29A)	T5P	33-55-59.11	116-49-37.09	2084	130	2214	n/a	Banning	2013-AWP-2688	5/8/2013	WIP		
32	D-V 168V-T5P-1 (29)	T5P	33-55-59.42	116-49-42.50	2091	120	2211	n/a	Banning	2013-AWP-2689	5/8/2013	WIP		
33	D-V 168U-T5P-1 (28)	T5P	33-55-59.48	116-49-50.63	2099	125	2224	n/a	Banning	2013-AWP-2690	5/8/2013	WIP		
34	D-V 168T-T5P-1 (27)	T5P	33-55-59.48	116-50-02.07	2119	125	2244	n/a	Banning	2013-AWP-2691	5/8/2013	WIP		
35	D-V 168S-T5P-1 (26)	T5P	33-55-59.51	116-50-10.78	2137	125	2262	n/a	Banning	2013-AWP-2692	5/8/2013	WIP		
36	D-V 168R-T5P-1 (25A)	T5P	33-55-59.52	116-50-19.18	2154	130	2284	n/a	Banning	2013-AWP-2693	5/8/2013	WIP		
37	D-V 168Q-T5P-1 (25)	T5P	33-55-59.50	116-50-27.81	2176	130	2306	n/a	Banning	2013-AWP-2694	5/8/2013	WIP		
38	D-V 168P-T5P-1 (24)	T5P	33-55-59.51	116-50-36.48	2198	130	2328	n/a	Banning	2013-AWP-2695	5/8/2013	WIP		
39	D-V 168O-T5P-1 (23)	T5P	33-55-59.52	116-50-44.85	2217	130	2347	n/a	Banning	2013-AWP-2696	5/8/2013	WIP		
40	D-V 168N-T5P-1 (228)	T5P	33-55-59.54	116-50-51.25	2234	120	2354	n/a	Banning	2013-AWP-2697	5/8/2013	WIP		
41	D-V 168M-T5P-1 (22A)	T5P	33-55-59.54	116-50-56.61	2250	104	2354	n/a	Banning	2013-AWP-2698	5/8/2013	WIP		
42	D-V 168L-T5P-1 (22)	T5P	33-55-59.53	116-51-04.72	2271	130	2401	n/a	Banning	2013-AWP-2699	5/8/2013	WIP		
43	D-V 168K-T5P-1 (21)	T5P	33-55-59.53	116-51-13.35	2292	125	2417	n/a	Banning	2013-AWP-2700	5/8/2013	WIP		
44	D-V 168J-T5P-1 (20A)	T5P	33-56-06.42	116-51-18.28	2328	145	2473	n/a	Banning	2013-AWP-2701	5/8/2013	WIP		
45	D-V 168I-T5P-1 (20)	T5P	33-56-12.85	116-51-23.18	2359	145	2504	n/a	Banning	2013-AWP-2702	5/8/2013	WIP		
46	D-V 168H-T5P-1 (19)	T5P	33-56-19.22	116-51-27.75	2385	130	2515	n/a	Banning	2013-AWP-2703	5/8/2013	WIP		
47	D-V 168G-T5P-1 (18A)	T5P	33-56-24.83	116-51-32.60	2413	150	2563	n/a	Banning	2013-AWP-2704	5/8/2013	WIP		
48	D-V 168F (18)	L5T	33-50-30.19	116-51-37.98	2443	155	2598	n/a	Banning	2013-AWP-2661	5/8/2013	WIP		
49	D-V 168E (17)	L5T	33-56-37.87	116-51-45.34	2475	131	2606	n/a	Banning	2013-AWP-2662	5/8/2013	WIP		
50	D-V 168D (16)	L5T	33-56-45.81	116-51-52.93	2508	113	2621	n/a	Banning	2013-AWP-2663	5/8/2013	WIP		
51	D-V 168C (15)	L5T	33-56-49.82	116-52-00.97	2573	113	2686	n/a	Banning	2013-AWP-2664	5/8/2013	WIP		
52	D-V 1688 (14)	L5T	33-56-49.83	116-52-10.72	2628	122	2750	n/a	Banning	2013-AWP-2665	5/8/2013	WIP		
53	D-V 168A (13)	L5T	33-56-49.85	116-52-21.15	2601	140	2741	n/a	Banning	2013-AWP-2666	5/8/2013	WIP		
54	D-V 168 (12)	L5T	33-56-49.94	116-52-30.70	2649	140	2789	n/a	Banning	2013-AWP-2667	5/8/2013	WIP		



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Federal Aviation
Administration

« OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000238664-13 **Sponsor:** Southern California Edison - WS

Details for Case : 1 D-EC 71R (92) 13-S-0701.021

Show Project Summary

Case Status

ASN: 2013-AWP-2650-OE
Status: Accepted
Public Comments: None

Date Accepted: 05/08/2013
Date Determined:
Letters: None
Documents: 05/08/2013 13-S-0701.021 WOE...
05/08/2013 13-S-0701.021 Wes...

Project Documents:
None

Construction / Alteration Information

Notice Of: Construction
Duration: Permanent
If Temporary : Months: Days:
Work Schedule - Start:
Work Schedule - End:

**For temporary cranes-Does the permanent structure require separate notice to the FAA?
To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed.
If it is not filed, please state the reason in the Description of Proposal.*

State Filing:

Structure Summary

Structure Type: Other w/o Antenna
Structure Name: 1 D-EC 71R (92) 13-S-0701.021
NOTAM Number:
FCC Number:
Prior ASN:

Structure Details

Latitude: 33° 55' 58.81" N
Longitude: 116° 49' 16.46" W
Horizontal Datum: NAD83
Site Elevation (SE): 2074 (nearest foot)
Structure Height (AGL): 152 (nearest foot)
Current Height (AGL): (nearest foot)
** For notice of alteration or existing provide the current AGL height of the existing structure.
Include details in the Description of Proposal*

Nacelle Height (AGL): (nearest foot)
** For Wind Turbines 500ft AGL or greater*

Requested Marking/Lighting: None
Other :
Recommended Marking/Lighting:
Current Marking/Lighting: N/A Proposed Structure
Other : ☐
Nearest City: Banning
Nearest State: California
Description of Location: THIS IS 1 of 18 LST's.
On the Project Summary page upload any certified survey. 1 of 54 TOTAL structures being filed in Banning. 18 are Lattice Steel Towers (LST), 36 are Tubular Steel Poles (TSP).
Description of Proposal: Map and spreadsheet are uploaded.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies

Federal Aviation
Administration

« OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000238664-13

Sponsor: Southern California Edison - WS

Details for Case : 2 D-EC 71Q (91A)

Show Project Summary

Case Status

ASN: 2013-AWP-2651-OE

Status: Accepted

Public Comments: None

Date Accepted: 05/08/2013

Date Determined:

Letters: None

Documents: None

Project Documents:
None

Construction / Alteration Information

Notice Of: Construction

Duration: Permanent

if Temporary : Months: Days:

Work Schedule - Start:

Work Schedule - End:

**For temporary cranes-Does the permanent structure require separate notice to the FAA? To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed. If it is not filed, please state the reason in the Description of Proposal*

State Filing:

Structure Summary

Structure Type: Other w/o Antenna

Structure Name: 2 D-EC 71Q (91A)

NOTAM Number:

FCC Number:

Prior ASN:

Structure Details

Latitude: 33° 55' 58.54" N

Longitude: 116° 49' 25.10" W

Horizontal Datum: NAD83

Site Elevation (SE): 2073 (nearest foot)

Structure Height (AGL): 155 (nearest foot)

Current Height (AGL): (nearest foot)
** For notice of alteration or existing provide the current AGL height of the existing structure.*
Include details in the Description of Proposal

Nacelle Height (AGL): (nearest foot)
** For Wind Turbines 500ft AGL or greater*

Requested Marking/Lighting: None

Other :

Recommended Marking/Lighting:

Current Marking/Lighting: N/A Proposed Structure

Other : ☐

Nearest City: Banning

Nearest State: California

Description of Location: THIS IS 2 of 18 LST's.
2 of 54 TOTAL structures being filed in Banning. 18 are Lattice Steel Towers (LST), 36 are Tubular Steel Poles (TSP).
On the Project Summary page upload any certified survey.

Description of Proposal: map and spreadsheet are uploaded.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies

Federal Aviation
Administration

» OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000238664-13 **Sponsor:** Southern California Edison - WS

Details for Case : 21 D-EC69 (79)

Show Project Summary

Case Status

ASN: 2013-AWP-2652-OE
Status: Accepted
Public Comments: None

Date Accepted: 05/08/2013
Date Determined:
Letters: None
Documents: None
Project Documents:
None

Construction / Alteration Information

Notice Of: Construction
Duration: Permanent
If Temporary : Months: Days:
Work Schedule - Start:
Work Schedule - End:

**For temporary cranes-Does the permanent structure require separate notice to the FAA?*
To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed.
If it is not filed, please state the reason in the Description of Proposal.

State Filing:

Structure Summary

Structure Type: Other w/o Antenna
Structure Name: 21 D-EC69 (79)
NOTAM Number:
FCC Number:
Prior ASN:

Structure Details

Latitude: 33° 56' 39.52" N
Longitude: 116° 51' 37.54" W
Horizontal Datum: NAD83
Site Elevation (SE): 2443 (nearest foot)
Structure Height (AGL): 155 (nearest foot)
Current Height (AGL): (nearest foot)
** For notice of alteration or existing provide the current*
AGL height of the existing structure.
Include details in the Description of Proposal

Nacelle Height (AGL): (nearest foot)
** For Wind Turbines 500ft AGL or greater*

Requested Marking/Lighting: None
Other :
Recommended Marking/Lighting:
Current Marking/Lighting: N/A Proposed Structure
Other : ☐

Nearest City: Banning
Nearest State: California
Description of Location: THIS IS 3 of 18 LST's.
On the Project Summary page upload any certified survey.
3 of 54 TOTAL structures being filed in Banning, 18 are Lattice Steel Towers (LST), 36 are Tubular Steel Poles (TSP).
Description of Proposal: map and spreadsheet are uploaded.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies

Federal Aviation
Administration

« OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000238664-13

Sponsor: Southern California Edison - WS

Details for Case : 22 D-EC 68 (78)

Show Project Summary

Case Status

ASN:	2013-AWP-2653-OE
Status:	Accepted
Public Comments:	None

Date Accepted:	05/08/2013
Date Determined:	
Letters:	None
Documents:	None
	Project Documents: None

Construction / Alteration Information

Notice Of:	Construction
Duration:	Permanent
If Temporary :	Months: Days:
Work Schedule - Start:	
Work Schedule - End:	

For temporary cranes-Does the permanent structure require separate notice to the FAA? To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed. If it is not filed, please state the reason in the Description of Proposal.

State Filing:

Structure Summary

Structure Type:	Other w/o Antenna
Structure Name:	22 D-EC 68 (78)
NOTAM Number:	
FCC Number:	
Prior ASN:	

Structure Details

Latitude:	33° 56' 36.21" N
Longitude:	116° 51' 44.89" W
Horizontal Datum:	NAD83
Site Elevation (SE):	2475 (nearest foot)
Structure Height (AGL):	155 (nearest foot)
Current Height (AGL): ** For notice of alteration or existing provide the current AGL height of the existing structure. Include details in the Description of Proposal*	(nearest foot)
Nacelle Height (AGL): ** For Wind Turbines 500ft AGL or greater*	(nearest foot)
Requested Marking/Lighting:	None
Other :	
Recommended Marking/Lighting:	
Current Marking/Lighting:	N/A Proposed Structure
Other :	
Nearest City:	Banning
Nearest State:	California
Description of Location: *On the Project Summary page upload any certified survey.*	THIS IS 4 of 18 LST's. 4 of 54 TOTAL structures being filed in Banning. 18 are Lattice Steel Towers (LST), 36 are Tubular Steel Poles (TSP).
Description of Proposal:	map and spreadsheet are uploaded.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies

Federal Aviation
Administration

« OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000238564-13

Sponsor: Southern California Edison - WS

Details for Case : 23 D-EC 67 (77)

Show Project Summary

Case Status

ASN:	2013-AWP-2654-OE
Status:	Accepted
Public Comments:	None

Date Accepted:	05/08/2013
Date Determined:	
Letters:	None
Documents:	None
	Project Documents: None

Construction / Alteration Information

Notice Of:	Construction
Duration:	Permanent
if Temporary :	Months: Days:
Work Schedule - Start:	
Work Schedule - End:	

**For temporary cranes-Does the permanent structure require separate notice to the FAA?
To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed.
If it is not filed, please state the reason in the Description of Proposal.*

State Filing:

Structure Summary

Structure Type:	Other w/o Antenna
Structure Name:	23 D-EC 67 (77)
NOTAM Number:	
FCC Number:	
Prior ASN:	

Structure Details

Latitude:	33° 56' 56.14" N
Longitude:	116° 51' 52.49" W
Horizontal Datum:	NAD83
Site Elevation (SE):	2507 (nearest foot)
Structure Height (AGL):	143 (nearest foot)
Current Height (AGL): ** For notice of alteration or existing provide the current AGL height of the existing structure.* *Include details in the Description of Proposal*	(nearest foot)
Nacelle Height (AGL): ** For Wind Turbines 500ft AGL or greater*	(nearest foot)
Requested Marking/Lighting:	None
Other :	
Recommended Marking/Lighting:	
Current Marking/Lighting:	N/A Proposed Structure
Other :	☐
Nearest City:	Banning
Nearest State:	California
Description of Location: *On the Project Summary page upload any certified survey.*	THIS IS 5 of 18 LST's. 5 of 54 TOTAL structures being filed in Banning, 18 are Lattice Steel Towers (LST), 36 are Tubular Steel Poles (TSP).
Description of Proposal:	map and spreadsheet are uploaded.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies

Federal Aviation
Administration

« OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000238664-13

Sponsor: Southern California Edison - WS

Details for Case : 24 D-EC 66 (D-EC 71)

Show Project Summary

Case Status

ASN: 2013-AWP-2655-OE

Status: Accepted

Public Comments: None

Date Accepted: 05/08/2013

Date Determined:

Letters: None

Documents: None

Project Documents:
None

Construction / Alteration Information

Notice Of: Construction

Duration: Permanent

If Temporary : **Months:** **Days:**

Work Schedule - Start:

Work Schedule - End:

**For temporary cranes-Does the permanent structure require separate notice to the FAA?*
To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed.
If it is not filed, please state the reason in the Description of Proposal.

State Filing:

Structure Summary

Structure Type: Other w/o Antenna

Structure Name: 24 D-EC 66 (D-EC 71)

NOTAM Number:

FCC Number:

Prior ASN:

Structure Details

Latitude: 33° 56' 50.31" N

Longitude: 116° 52' 0.70" W

Horizontal Datum: NAD83

Site Elevation (SE): 3568 (nearest foot)

Structure Height (AGL): 122 (nearest foot)

Current Height (AGL): (nearest foot)
** For notice of alteration or existing provide the current*
AGL height of the existing structure.
Include details in the Description of Proposal

Nacelle Height (AGL): (nearest foot)
** For Wind Turbines 500ft AGL or greater*

Requested Marking/Lighting: None

Other :

Recommended Marking/Lighting:

Current Marking/Lighting: N/A Proposed Structure

Other : ☐

Nearest City: Banning

Nearest State: California

Description of Location: THIS IS 6 of 18 LST'S.
On the Project Summary page upload any certified survey. 6 of 54 TOTAL structures being filed in Banning. 18 are Lattice Steel Towers (LST), 36 are Tubular Steel Poles (TSP).

Description of Proposal: map and spreadsheet are uploaded.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies

Federal Aviation Administration

« OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000236664-13

Sponsor: Southern California Edison - WS

Details for Case : 25 D-EC 65

Show Project Summary

Case Status

ASN: 2013-AWP-2656-OE

Status: Accepted

Public Comments: None

Date Accepted: 05/08/2013

Date Determined:

Letters: None

Documents: None

Project Documents:
None

Construction / Alteration Information

Notice Of: Construction

Duration: Permanent

if Temporary : Months: Days:

Work Schedule - Start:

Work Schedule - End:

**For temporary cranes-Does the permanent structure require separate notice to the FAA?
To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed.
If it is not filed, please state the reason in the Description of Proposal.*

State Filing:

Structure Summary

Structure Type: Other w/o Antenna

Structure Name: 25 D-EC 65

NOTAM Number:

FCC Number:

Prior ASN:

Structure Details

Latitude: 33° 56' 50.32" N

Longitude: 116° 52' 10.72" W

Horizontal Datum: NAD83

Site Elevation (SE): 2659 (nearest foot)

Structure Height (AGL): 122 (nearest foot)

Current Height (AGL): (nearest foot)
** For notice of alteration or existing provide the current AGL height of the existing structure.
Include details in the Description of Proposal*

Nacelle Height (AGL): (nearest foot)
** For Wind Turbines 500ft AGL or greater*

Requested Marking/Lighting: None

Other :

Recommended Marking/Lighting:

Current Marking/Lighting: N/A Proposed Structure

Other : ☐

Nearest City: Banning

Nearest State: California

Description of Location: THIS IS 7 of 18 LST's.
On the Project Summary page upload any certified survey.
7 of 54 TOTAL structures being filed in Banning. 18 are Lattice Steel Towers (LST), 36 are Tubular Steel Poles (TSP).

Description of Proposal: map and spreadsheet are uploaded.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies

Federal Aviation
Administration

« OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000238664-13

Sponsor: Southern California Edison - WS

Details for Case : 26 D-EC 64

Show Project Summary

Case Status

ASN: 2013-AWP-2657-OE
Status: Accepted

Public Comments: None

Date Accepted: 05/08/2013
Date Determined:
Letters: None
Documents: None
Project Documents:
None

Construction / Alteration Information

Notice Of: Construction
Duration: Permanent
If Temporary : Months: Days:
Work Schedule - Start:
Work Schedule - End:

**For temporary cranes-Does the permanent structure require separate notice to the FAA?*
To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed.
If it is not filed, please state the reason in the Description of Proposal.

State Filing:

Structure Summary

Structure Type: Other w/o Antenna
Structure Name: 26 D-EC 64
NOTAM Number:
FCC Number:
Prior ASN:

Structure Details

Latitude: 33° 56' 50.34" N
Longitude: 116° 52' 21.15" W
Horizontal Datum: NAD83
Site Elevation (SE): 2603 (nearest foot)
Structure Height (AGL): 140 (nearest foot)
Current Height (AGL): (nearest foot)
** For notice of alteration or existing provide the current*
AGL height of the existing structure.
Include details in the Description of Proposal

Nacelle Height (AGL): (nearest foot)
** For Wind Turbines 500ft AGL or greater*

Requested Marking/Lighting: None
Other :

Recommended Marking/Lighting:
Current Marking/Lighting: N/A Proposed Structure
Other : ☐

Nearest City: Banning
Nearest State: California
Description of Location: THIS IS 8 of 18 LST's.
On the Project Summary page upload any certified survey.
8 of 54 TOTAL structures being filed in
Banning, 18 are Lattice Steel Towers (LST),
36 are Tubular Steel Poles (TSP).
Description of Proposal: map and spreadsheet are uploaded

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies

Federal Aviation Administration

« OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000230664-13

Sponsor: Southern California Edison - WS

Details for Case : 27 D-EC 63 (73)

Show Project Summary

Case Status

ASN:	2013-AWP-2658-OE
Status:	Accepted
Public Comments:	None

Date Accepted:	05/08/2013
Date Determined:	
Letters:	None
Documents:	None
	Project Documents: None

Construction / Alteration Information

Notice Of:	Construction
Duration:	Permanent
if Temporary :	Months: Days:
Work Schedule - Start:	
Work Schedule - End:	

**For temporary cranes-Does the permanent structure require separate notice to the FAA? To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed. If it is not filed, please state the reason in the Description of Proposal.*

State Filing:

Structure Summary

Structure Type:	Other w/o Antenna
Structure Name:	27 D-EC 63 (73)
NOTAM Number:	
FCC Number:	
Prior ASN:	

Structure Details

Latitude:	33° 56' 50.44" N
Longitude:	116° 52' 30.69" W
Horizontal Datum:	NAD83
Site Elevation (SE):	2638 (nearest foot)
Structure Height (AGL):	152 (nearest foot)
Current Height (AGL): ** For notice of alteration or existing provide the current AGL height of the existing structure. Include details in the Description of Proposal*	(nearest foot)
Nacelle Height (AGL): ** For Wind Turbines 500ft AGL or greater*	(nearest foot)
Requested Marking/Lighting:	None
Other :	
Recommended Marking/Lighting:	
Current Marking/Lighting:	N/A Proposed Structure
Other :	☐
Nearest City:	Banning
Nearest State:	California
Description of Location: *On the Project Summary page upload any certified survey.*	THIS IS 9 of 18 LST's. 9 of 54 TOTAL structures being filed in Banning. 18 are Lattice Steel Towers (LST), 36 are Tubular Steel Poles (TSP).
Description of Proposal:	map and spreadsheet are uploaded.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies

Federal Aviation
Administration

» OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000238664-13 **Sponsor:** Southern California Edison - WS

Details for Case : 28 D-V 1682 (31)

Show Project Summary

Case Status

ASN:	2013-AWP-3659-OE
Status:	Accepted
Public Comments:	None

Date Accepted:	05/08/2013
Date Determined:	
Letters:	None
Documents:	None
	Project Documents: None

Construction / Alteration Information

Notice Of:	Construction
Duration:	Permanent
if Temporary :	Months: Days:
Work Schedule - Start:	
Work Schedule - End:	

**For temporary cranes-Does the permanent structure require separate notice to the FAA? To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed. If it is not filed, please state the reason in the Description of Proposal.*

State Filing:

Structure Summary

Structure Type:	Other w/o Antenna
Structure Name:	28 D-V 1682 (31)
NOTAM Number:	
FCC Number:	
Prior ASN:	

Structure Details

Latitude:	33° 55' 55.31" N
Longitude:	116° 49' 18.51" W
Horizontal Datum:	NAD83
Site Elevation (SE):	2072 (nearest foot)
Structure Height (AGL):	170 (nearest foot)
Current Height (AGL): ** For notice of alteration or existing provide the current AGL height of the existing structure. Include details in the Description of Proposal*	(nearest foot)
Nacelle Height (AGL): ** For Wind Turbines 500ft AGL or greater*	(nearest foot)
Requested Marking/Lighting:	None
Other :	
Recommended Marking/Lighting:	
Current Marking/Lighting:	N/A Proposed Structure
Other :	☐
Nearest City:	Banning
Nearest State:	California
Description of Location: *On the Project Summary page upload any certified survey.*	THIS IS 18 of 18 LST's, 10 of 54 TOTAL structures being filed in Banning. 18 are Lattice Steel Towers (LST), 36 are Tubular Steel Poles (TSP).
Description of Proposal:	map and spreadsheet are uploaded.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies

Federal Aviation
Administration

« OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000238664-13

Sponsor: Southern California Edison - WS

Details for Case : 29 D-V 168Y (30A)

Show Project Summary

Case Status

ASN:	2013-AWP-2660-OE
Status:	Accepted
Public Comments:	None

Date Accepted:	05/08/2013
Date Determined:	
Letters:	None
Documents:	None
	Project Documents: None

Construction / Alteration Information

Notice Of:	Construction
Duration:	Permanent
if Temporary :	Months: Days:
Work Schedule - Start:	
Work Schedule - End:	

**For temporary cranes-Does the permanent structure require separate notice to the FAA?*
To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed.
If it is not filed, please state the reason in the Description of Proposal.

State Filing:

Structure Summary

Structure Type:	Other w/o Antenna
Structure Name:	29 D-V 168Y (30A)
NOTAM Number:	
FCC Number:	
Prior ASN:	

Structure Details

Latitude:	33° 55' 56.06" N
Longitude:	116° 49' 25.20" W
Horizontal Datum:	NAD83
Site Elevation (SE):	2071 (nearest foot)
Structure Height (AGL):	145 (nearest foot)
Current Height (AGL): ** For notice of alteration or existing provide the current AGL height of the existing structure. Include details in the Description of Proposal*	(nearest foot)
Nacelle Height (AGL): ** For Wind Turbines 500ft AGL or greater*	(nearest foot)
Requested Marking/Lighting:	None
Other :	
Recommended Marking/Lighting:	
Current Marking/Lighting:	N/A Proposed Structure
Other :	☐
Nearest City:	Banning
Nearest State:	California
Description of Location: *On the Project Summary page upload any certified survey.*	THIS IS 11 of 18 LST's, 11 of 54 TOTAL structures being filed in Banning. 18 are Lattice Steel Towers (LST). 36 are Tubular Steel Poles (TSP).
Description of Proposal:	map and spreadsheet are uploaded.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies

Federal Aviation
Administration

» OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000238664-13 **Sponsor:** Southern California Edison - WS

Details for Case : 48 D-V 168F (18)

Show Project Summary

Case Status

ASN:	2013-AWP-2661-OE	**Date Accepted:**	05/08/2013
Status:	Accepted	**Date Determined:**	
		Letters:	None
		Documents:	None
Public Comments:	None		Project Documents: None

Construction / Alteration Information

Notice Of:	Construction
Duration:	Permanent
If Temporary :	Months: Days:
Work Schedule - Start:	
Work Schedule - End:	

**For temporary cranes-Does the permanent structure require separate notice to the FAA? To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed. If it is not filed, please state the reason in the Description of Proposal.*

State Filing:

Structure Summary

Structure Type:	Other w/o Antenna
Structure Name:	48 D-V 168F (18)
NOTAM Number:	
FCC Number:	
Prior ASN:	

Structure Details

Latitude:	33° 50' 30.19" N
Longitude:	116° 51' 37.98" W
Horizontal Datum:	NAD83
Site Elevation (SE):	2443 (nearest foot)
Structure Height (AGL):	155 (nearest foot)
Current Height (AGL): ** For notice of alteration or existing provide the current AGL height of the existing structure.* *Include details in the Description of Proposal*	(nearest foot)
Nacelle Height (AGL): ** For Wind Turbines 500ft AGL or greater*	(nearest foot)
Requested Marking/Lighting:	None
Other :	
Recommended Marking/Lighting:	
Current Marking/Lighting:	N/A Proposed Structure
Other :	
Nearest City:	Banning
Nearest State:	California
Description of Location: *On the Project Summary page upload any certified survey.*	THIS IS 12 of 18 LST's. 12 of 54 TOTAL structures being filed in Banning. 18 are Lattice Steel Towers (LST), 36 are Tubular Steel Poles (TSP).
Description of Proposal:	map and spreadsheet are uploaded.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies

Federal Aviation
Administration

» OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000238664-13

Sponsor: Southern California Edison - WS

Details for Case : 49 D-V 168E (17)

Show Project Summary

Case Status

ASN: 2013-AWP-2662-OE
Status: Accepted
Public Comments: None

Date Accepted: 05/08/2013
Date Determined:
Letters: None
Documents: None
Project Documents: None

Construction / Alteration Information

Notice Of: Construction
Duration: Permanent
If Temporary : Months: Days:
Work Schedule - Start:
Work Schedule - End:

**For temporary cranes-Does the permanent structure require separate notice to the FAA? To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed. If it is not filed, please state the reason in the Description of Proposal.*

State Filing:

Structure Summary

Structure Type: Other w/o Antenna
Structure Name: 49 D-V 168E (17)
NOTAM Number:
FCC Number:
Prior ASN:

Structure Details

Latitude: 33° 56' 37.87" N
Longitude: 116° 51' 45.34" W
Horizontal Datum: NAD83
Site Elevation (SE): 2475 (nearest foot)
Structure Height (AGL): 131 (nearest foot)
Current Height (AGL): (nearest foot)
** For notice of alteration or existing provide the current AGL height of the existing structure. Include details in the Description of Proposal*
Nacelle Height (AGL): (nearest foot)
** For Wind Turbines 500ft AGL or greater*
Requested Marking/Lighting: None
Other :
Recommended Marking/Lighting:
Current Marking/Lighting: N/A Proposed Structure
Other : ☐
Nearest City: Banning
Nearest State: California
Description of Location: THIS IS 13 of 18 LST's. 13 of 54 TOTAL structures being filed in Banning. 18 are Lattice Steel Towers (LST). 36 are Tubular Steel Poles (TSP).
On the Project Summary page upload any certified survey.
Description of Proposal: map and spreadsheet are uploaded.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies

Federal Aviation
Administration

« OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000238664-13

Sponsor: Southern California Edison - WS

Details for Case : 50 D-V 168D (16)

Show Project Summary

Case Status

ASN: 2013-AWP-2663-OE

Status: Accepted

Public Comments: None

Date Accepted: 05/08/2013

Date Determined:

Letters: None

Documents: None

Project Documents:
None

Construction / Alteration Information

Notice Of: Construction

Duration: Permanent

If Temporary : Months: Days:

Work Schedule - Start:

Work Schedule - End:

**For temporary cranes-Does the permanent structure require separate notice to the FAA? To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed. If it is not filed, please state the reason in the Description of Proposal.*

State Filing:

Structure Summary

Structure Type: Other w/o Antenna

Structure Name: 50 D-V 168D (16)

NOTAM Number:

FCC Number:

Prior ASN:

Structure Details

Latitude: 33° 56' 45.81" N

Longitude: 116° 51' 52.93" W

Horizontal Datum: NAD83

Site Elevation (SE): 2588 (nearest foot)

Structure Height (AGL): 113 (nearest foot)

Current Height (AGL): (nearest foot)
** For notice of alteration or existing provide the current AGL height of the existing structure.*
Include details in the Description of Proposal

Nacelle Height (AGL): (nearest foot)
** For Wind Turbines 500ft AGL or greater*

Requested Marking/Lighting: None

Other :

Recommended Marking/Lighting:

Current Marking/Lighting: N/A Proposed Structure

Other : ☐

Nearest City: Banning

Nearest State: California

Description of Location: THIS IS 14 of 18 LST's,
On the Project Summary page upload any certified survey. 14 of 54 TOTAL structures being filed in Banning. 18 are Lattice Steel Towers (LST), 36 are Tubular Steel Poles (TSP).

Description of Proposal: map and spreadsheet are uploaded.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies

Federal Aviation Administration

» OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000238664-13 **Sponsor:** Southern California Edison - WS

Details for Case : 51 D-V 168C (15)

Show Project Summary

Case Status

ASN:	2013-AWP-2664-OE
Status:	Accepted
Public Comments:	None

Date Accepted:	05/08/2013
Date Determined:	
Letters:	None
Documents:	None
	Project Documents: None

Construction / Alteration Information

Notice Of:	Construction
Duration:	Permanent
If Temporary :	Months: Days:
Work Schedule - Start:	
Work Schedule - End:	

**For temporary cranes-Does the permanent structure require separate notice to the FAA? To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed. If it is not filed, please state the reason in the Description of Proposal.*

State Filing:

Structure Summary

Structure Type:	Other w/o Antenna
Structure Name:	51 D-V 168C (15)
NOTAM Number:	
FCC Number:	
Prior ASN:	

Structure Details

Latitude:	33° 56' 49.82" N
Longitude:	116° 52' 0.97" W
Horizontal Datum:	NAD83
Site Elevation (SE):	2573 (nearest foot)
Structure Height (AGL):	113 (nearest foot)
Current Height (AGL): ** For notice of alteration or existing provide the current AGL height of the existing structure. Include details in the Description of Proposal*	(nearest foot)
Nacelle Height (AGL): ** For Wind Turbines 500ft AGL or greater*	(nearest foot)
Requested Marking/Lighting:	None
Other :	
Recommended Marking/Lighting:	
Current Marking/Lighting:	N/A Proposed Structure
Other :	☐
Nearest City:	Banning
Nearest State:	California
Description of Location: *On the Project Summary page upload any certified survey.*	THIS IS 15 of 18 LST's. 15 of 54 TOTAL structures being filed in Banning, 18 are Lattice Steel Towers (LST), 36 are Tubular Steel Poles (TSP).
Description of Proposal:	map and spreadsheet are uploaded.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies

Federal Aviation
Administration

« OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000236664-13

Sponsor: Southern California Edison - WS

Details for Case : 52 D-V 168B (14)

Show Project Summary

Case Status

ASN:	2013-AWP-2665-OE	**Date Accepted:**	05/08/2013
Status:	Accepted	**Date Determined:**	
		Letters:	None
		Documents:	None
Public Comments:	None		**Project Documents:** None

Construction / Alteration Information

Notice Of:	Construction
Duration:	Permanent
If Temporary :	Months: Days:
Work Schedule - Start:	
Work Schedule - End:	

**For temporary cranes-Does the permanent structure require separate notice to the FAA? To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed. If it is not filed, please state the reason in the Description of Proposal.*

State Filing:

Structure Summary

Structure Type:	Other w/o Antenna
Structure Name:	52 D-V 1688 (14)
NOTAM Number:	
FCC Number:	
Prior ASN:	

Structure Details

Latitude:	33° 56' 49.83" N
Longitude:	116° 52' 10.72" W
Horizontal Datum:	NAD83
Site Elevation (SE):	2620 (nearest foot)
Structure Height (AGL):	122 (nearest foot)
Current Height (AGL): ** For notice of alteration or existing provide the current AGL height of the existing structure. Include details in the Description of Proposal*	(nearest foot)
Nacelle Height (AGL): ** For Wind Turbines 500ft AGL or greater*	(nearest foot)
Requested Marking/Lighting:	None
Other :	
Recommended Marking/Lighting:	
Current Marking/Lighting:	N/A Proposed Structure
Other :	☐
Nearest City:	Banning
Nearest State:	California
Description of Location: *On the Project Summary page upload any certified survey.*	THIS IS 16 of 16 LST's. 16 of 54 TOTAL structures being filed in Banning. 18 are Lattice Steel Towers (LST), 36 are Tubular Steel Poles (TSP).
Description of Proposal:	map and spreadsheet are uploaded.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000238864-13 **Sponsor:** Southern California Edison - WS

Details for Case : 53 D-V 168A (13)

Show Project Summary

Case Status

ASN:	2013-AWP-2666-OE	**Date Accepted:**	05/08/2013
Status:	Accepted	**Date Determined:**	
		Letters:	None
		Documents:	None
Public Comments:	None		Project Documents: None

Construction / Alteration Information

Notice Of:	Construction
Duration:	Permanent
If Temporary :	Months: Days:
Work Schedule - Start:	
Work Schedule - End:	

**For temporary cranes-Does the permanent structure require separate notice to the FAA? To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed. If it is not filed, please state the reason in the Description of Proposal.*

State Filing:

Structure Summary

Structure Type:	Other w/o Antenna
Structure Name:	53 D-V 168A (13)
NOTAM Number:	
FCC Number:	
Prior ASN:	

Structure Details

Latitude:	33° 56' 43.85" N
Longitude:	116° 52' 21.15" W
Horizontal Datum:	NAD83
Site Elevation (SE):	2601 (nearest foot)
Structure Height (AGL):	148 (nearest foot)
Current Height (AGL): ** For notice of alteration or existing provide the current AGL height of the existing structure. Include details in the Description of Proposal*	(nearest foot)
Nacelle Height (AGL): ** For Wind Turbines 500ft AGL or greater*	(nearest foot)
Requested Marking/Lighting:	None
Other :	
Recommended Marking/Lighting:	
Current Marking/Lighting:	N/A Proposed Structure
Other :	☐
Nearest City:	Banning
Nearest State:	California
Description of Location: *On the Project Summary page upload any certified survey.*	THIS IS 17 of 18 LST's. 17 of 54 TOTAL structures being filed in Banning. 18 are Lattice Steel Towers (LST), 36 are Tubular Steel Poles (TSP).
Description of Proposal:	map and spreadsheet are uploaded.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies

Federal Aviation
Administration

» OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000238664-13 **Sponsor:** Southern California Edison - WS

Details for Case : 54 D-V 168 (12)

Show Project Summary

Case Status

ASN:	2013-AWP-2657-OE	Date Accepted:	05/08/2013
Status:	Accepted	Date Determined:	
		Letters:	None
		Documents:	None
Public Comments:	None		Project Documents: None

Construction / Alteration Information

Notice Of:	Construction
Duration:	Permanent
If Temporary :	Months: Days:
Work Schedule - Start:	
Work Schedule - End:	

**For temporary cranes-Does the permanent structure require separate notice to the FAA? To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed. If it is not filed, please state the reason in the Description of Proposal.*

State Filing:

Structure Summary

Structure Type:	Other w/o Antenna
Structure Name:	54 D-V 168 (12)
NOTAM Number:	
FCC Number:	
Prior ASN:	

Structure Details

Latitude:	33° 55' 49.94" N
Longitude:	116° 52' 30.70" W
Horizontal Datum:	NAD83
Site Elevation (SE):	2049 (nearest foot)
Structure Height (AGL):	140 (nearest foot)
Current Height (AGL): ** For notice of alteration or existing provide the current AGL height of the existing structure. Include details in the Description of Proposal*	(nearest foot)
Nacelle Height (AGL): ** For Wind Turbines 500ft AGL or greater*	(nearest foot)
Requested Marking/Lighting:	None
Other :	
Recommended Marking/Lighting:	
Current Marking/Lighting:	N/A Proposed Structure
Other :	☐
Nearest City:	Banning
Nearest State:	California
Description of Location: *On the Project Summary page upload any certified survey.*	THIS IS 18 of 18 LST's. 18 of 54 TOTAL structures being filed in Banning. 18 are Lattice Steel Towers (LST), 36 are Tubular Steel Poles (TSP).
Description of Proposal:	map and spreadsheet are uploaded.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies

Federal Aviation
Administration

» OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000238709-13

Sponsor: Southern California Edison - WS

Details for Case : 3 D-EC 71P-TSP-1(91) 13-S-0701.021

Show Project Summary

Case Status

ASN: 2013-AWP-2689-OE

Status: Accepted

Public Comments: None

Date Accepted: 05/08/2013

Date Determined:

Letters: None

Documents: 05/08/2013 13-S-0701.021 Wes...
05/08/2013 13-S-0701.021 WDS...

Project Documents:
None

Construction / Alteration Information

Notice Of: Construction

Duration: Permanent

If Temporary : Months: Days:

Work Schedule - Start:

Work Schedule - End:

**For temporary cranes-Does the permanent structure require separate notice to the FAA? To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed. If it is not filed, please state the reason in the Description of Proposal.*

State Filing:

Structure Summary

Structure Type: Other w/o Antenna

Structure Name: 3 D-EC 71P-TSP-1(91) 13-S-0701.021

NOTAM Number:

FCC Number:

Prior ASN:

Structure Details

Latitude: 33° 55' 59.19" N

Longitude: 116° 40' 29.93" W

Horizontal Datum: NAD83

Site Elevation (SE): 2079 (nearest foot)

Structure Height (AGL): 125 (nearest foot)

Current Height (AGL): (nearest foot)
** For notice of alteration or existing provide the current AGL height of the existing structure.*
Include details in the Description of Proposal

Nacelle Height (AGL): (nearest foot)
** For Wind Turbines 500ft AGL or greater*

Requested Marking/Lighting: None

Other :

Recommended Marking/Lighting:

Current Marking/Lighting: N/A Proposed Structure

Other : ☐

Nearest City: Banning

Nearest State: California

Description of Location: THIS IS 1 of 36 TSP's.
19 of 54 TOTAL structures being filed in Banning. 18 are Lattice Steel Towers (LST), 36 are Tubular Steel Poles (TSP).
On the Project Summary page upload any certified survey.

Description of Proposal: Please refer to uploaded Map and Structure listing.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies

Federal Aviation
Administration

« OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000238709-13 **Sponsor:** Southern California Edison - WS

Details for Case : 4 D-EC 71O-TSP-1 (90A)

Show Project Summary

Case Status

ASN: 2013-AWP-2670-OE

Status: Accepted

Public Comments: None

Date Accepted: 05/08/2013

Date Determined:

Letters: None

Documents: None

Project Documents:
None

Construction / Alteration Information

Notice Of: Construction

Duration: Permanent

if Temporory : Months: Days:

Work Schedule - Start:

Work Schedule - End:

**For temporary cranes-Does the permanent structure require separate notice to the FAA?
To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed.
If it is not filed, please state the reason in the Description of Proposal.*

State Filing:

Structure Summary

Structure Type: Other w/o Antenna

Structure Name: 4 D-EC 71O-TSP-1 (90A)

NOTAM Number:

FCC Number:

Prior ASN:

Structure Details

Latitude: 33° 55' 59.60" N

Longitude: 116° 48' 37.05" W

Horizontal Datum: NAD83

Site Elevation (SE): 2085 (nearest foot)

Structure Height (AGL): 125 (nearest foot)

Current Height (AGL): (nearest foot)
** For notice of alteration or existing provide the current AGL height of the existing structure.
Include details in the Description of Proposal*

Nacelle Height (AGL): (nearest foot)
** For Wind Turbines 500ft AGL or greater*

Requested Marking/Lighting: None

Other :

Recommended Marking/Lighting:

Current Marking/Lighting: N/A Proposed Structure

Other : ☐

Nearest City: Banning

Nearest State: California

Description of Location: THIS IS 2 of 36 TSP's.
On the Project Summary page upload any certified survey. 20 of 54 TOTAL structures being filed in Banning. 18 are Lattice Steel Towers (LST), 36 are Tubular Steel Poles (TSP).

Description of Proposal: Please refer to uploaded Map and Structure listing.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies

Federal Aviation
Administration

« OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000238709-13 **Sponsor:** Southern California Edison - WS

Details for Case : 5 D-EC 71N-TSP-1 (90)

Show Project Summary

Case Status

ASN: 2013-AWP-2673-OE
Status: Accepted
Public Comments: None

Date Accepted: 05/08/2013
Date Determined:
Letters: None
Documents: None
Project Documents:
None

Construction / Alteration Information

Notice Of: Construction
Duration: Permanent
If Temporary : Months: Days:
Work Schedule - Start:
Work Schedule - End:

**For temporary cranes-Does the permanent structure require separate notice to the FAA?
To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed.
If it is not filed, please state the reason in the Description of Proposal.*

State Filing:

Structure Summary

Structure Type: Other w/o Antenna
Structure Name: 5 D-EC 71N-TSP-1 (90)
NOTAM Number:
FCC Number:
Prior ASN:

Structure Details

Latitude: 33° 55' 59.92" N
Longitude: 116° 49' 43.47" W
Horizontal Datum: NAD83
Site Elevation (SE): 2092 (nearest foot)
Structure Height (AGL): 120 (nearest foot)
Current Height (AGL): (nearest foot)
** For notice of alteration or existing provide the current AGL height of the existing structure.
Include details in the Description of Proposal*

Nacelle Height (AGL): (nearest foot)
** For Wind Turbines 500ft AGL or greater*

Requested Marking/Lighting: None
Other :
Recommended Marking/Lighting:
Current Marking/Lighting: N/A Proposed Structure
Other : ☐
Nearest City: Banning
Nearest State: California
Description of Location: THIS IS 3 of 36 TSP's.
On the Project Summary page upload any certified survey. 21 of 54 TOTAL structures being filed in Banning. 18 are Lattice Steel Towers (LST), 36 are Tubular Steel Poles (TSP).
Description of Proposal: Please refer to uploaded Map and Structure listing.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies

Federal Aviation
Administration

« OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000238709-13

Sponsor: Southern California Edison - WS

Details for Case : 6 D-EC 71M-TSP-1 (89)

Show Project Summary

Case Status

ASN:	2013-AWP-2572-OE
Status:	Accepted
Public Comments:	None

Date Accepted:	05/08/2013
Date Determined:	
Letters:	None
Documents:	None
	Project Documents: None

Construction / Alteration Information

Notice Of:	Construction
Duration:	Permanent
If Temporary :	Months: Days:
Work Schedule - Start:	
Work Schedule - End:	

** For temporary cranes-Does the permanent structure require separate notice to the FAA?
To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed.
If it is not filed, please state the reason in the Description of Proposal.*

State Filing:

Structure Summary

Structure Type:	Other w/o Antenna
Structure Name:	6 D-EC 71M-TSP-1 (89)
NOTAM Number:	
FCC Number:	
Prior ASN:	

Structure Details

Latitude:	33° 55' 59.97" N
Longitude:	116° 49' 51.08" W
Horizontal Datum:	NAD83
Site Elevation (SE):	2102 (nearest foot)
Structure Height (AGL):	125 (nearest foot)
Current Height (AGL): ** For notice of alteration or existing provide the current AGL height of the existing structure.* *Include details in the Description of Proposal*	(nearest foot)
Nacelle Height (AGL): ** For Wind Turbines 500ft AGL or greater*	(nearest foot)
Requested Marking/Lighting:	None
Other :	
Recommended Marking/Lighting:	
Current Marking/Lighting:	N/A Proposed Structure
Other :	
Nearest City:	Banning
Nearest State:	California
Description of Location: *On the Project Summary page upload any certified survey.*	THIS IS 4 of 36 TSP's. 22 of 54 TOTAL structures being filed in Banning. 18 are Lattice Steel Towers (LST), 36 are Tubular Steel Poles (TSP).
Description of Proposal:	Please refer to uploaded Map and Structure listing.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies

Federal Aviation Administration

« OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000238709-13

Sponsor: Southern California Edison - WS

Details for Case : D-EC 71L-TSP-1 (38)

Show Project Summary

Case Status

ASN: 2013-AWP-2673-OE
Status: Accepted
Date Accepted: 05/08/2013
Date Determined:
Letters: None
Documents: None
Public Comments: None
Project Documents: None

Construction / Alteration Information

Notice Of: Construction
Duration: Permanent
If Temporary : Months: Days:
Work Schedule - Start:
Work Schedule - End:

**For temporary cranes-Does the permanent structure require separate notice to the FAA? To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed. If it is not filed, please state the reason in the Description of Proposal.*

State Filing:

Structure Summary

Structure Type: Other w/o Antenna
Structure Name: D-EC 71L-TSP-1 (38)
NOTAM Number:
FCC Number:
Prior ASN:

Structure Details

Latitude: 33° 55' 59.95" N
Longitude: 116° 50' 7.07" W
Horizontal Datum: NAD83
Site Elevation (SE): 2122 (nearest foot)
Structure Height (AGL): 135 (nearest foot)
Current Height (AGL): (nearest foot)
** For notice of alteration or existing provide the current AGL height of the existing structure. Include details in the Description of Proposal*

Nacelle Height (AGL): (nearest foot)
** For Wind Turbines 500ft AGL or greater*

Requested Marking/Lighting: None
Other :
Recommended Marking/Lighting:
Current Marking/Lighting: N/A Proposed Structure
Other :
Nearest City: Banning
Nearest State: California
Description of Location: THIS IS 5 of 36 TSP's. 23 of 54 TOTAL structures being filed in Banning. 18 are Lattice Steel Towers (LST), 36 are Tubular Steel Poles (TSP).
On the Project Summary page upload any certified survey.
Description of Proposal: Please refer to uploaded Map and Structure listing.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies

Federal Aviation
Administration

« OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000238709-13 **Sponsor:** Southern California Edison - WS

Details for Case : 8 D-EC 71K-TSP-1 (87)

Show Project Summary

Case Status

ASN: 2013-AWP-2674-OE

Status: Accepted

Public Comments: None

Date Accepted: 05/08/2013

Date Determined:

Letters: None

Documents: None

Project Documents:
None

Construction / Alteration Information

Notice Of: Construction

Duration: Permanent

If Temporary : Months: Days:

Work Schedule - Start:

Work Schedule - End:

**For temporary cranes-Does the permanent structure require separate notice to the FAA?
To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed.
If it is not filed, please state the reason in the Description of Proposal.*

State Filing:

Structure Summary

Structure Type: Other w/o Antenna

Structure Name: 8 D-EC 71K-TSP-1 (87)

NOTAM Number:

FCC Number:

Prior ASN:

Structure Details

Latitude: 33° 56' 0.03" N

Longitude: 116° 50' 10.78" W

Horizontal Datum: NAD83

Site Elevation (SE): 2138 (nearest foot)

Structure Height (AGL): 130 (nearest foot)

Current Height (AGL): (nearest foot)
** For notice of alteration or existing provide the current
AGL height of the existing structure.
Include details in the Description of Proposal*

Nacelle Height (AGL): (nearest foot)
** For Wind Turbines 500ft AGL or greater*

Requested Marking/Lighting: None

Other :

Recommended Marking/Lighting:

Current Marking/Lighting: N/A Proposed Structure

Other : ☐

Nearest City: Banning

Nearest State: California

Description of Location:
On the Project Summary page upload any certified survey.
THIS IS 6 of 36 TSP's,
24 of 54 TOTAL structures being filed in Banning. 18 are Lattice Steel Towers (LST).
36 are Tubular Steel Poles (TSP).

Description of Proposal: Please refer to uploaded Map and Structure listing.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies

Federal Aviation
Administration

« OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000238709-13

Sponsor: Southern California Edison - WS

Details for Case : 9 D-EC 71J-TSP-1 (86)

Show Project Summary

Case Status

ASN: 2013-AWP-2675-OE

Status: Accepted

Public Comments: None

Date Accepted: 05/08/2013

Date Determined:

Letters: None

Documents: None

Project Documents:
None

Construction / Alteration Information

Notice Of: Construction

Duration: Permanent

***If Temporary* :** Months: Days:

Work Schedule - Start:

Work Schedule - End:

**For temporary cranes-Does the permanent structure require separate notice to the FAA?*
To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed.
If it is not filed, please state the reason in the Description of Proposal.

State Filing:

Structure Summary

Structure Type: Other w/o Antenna

Structure Name: 9 D-EC 71J-TSP-1 (86)

NOTAM Number:

FCC Number:

Prior ASN:

Structure Details

Latitude: 33° 55' 0.00" N

Longitude: 116° 50' 19.17" W

Horizontal Datum: NAD83

Site Elevation (SE): 2154 (nearest foot)

Structure Height (AGL): 125 (nearest foot)

Current Height (AGL): (nearest foot)
** For notice of alteration or existing provide the current AGL height of the existing structure.*
Include details in the Description of Proposal

Nacelle Height (AGL): (nearest foot)
** For Wind Turbines 500ft AGL or greater*

Requested Marking/Lighting: None

***Other* :**

Recommended Marking/Lighting:

Current Marking/Lighting: N/A Proposed Structure

***Other* :** ☐

Nearest City: Banning

Nearest State: California

Description of Location: THIS IS 7 of 36 TSP's.
25 of 54 TOTAL structures being filed in Banning. 18 are Lattice Steel Towers (LST), 36 are Tubular Steel Poles (TSP).
On the Project Summary page upload any certified survey.

Description of Proposal: Please refer to uploaded Map and Structure listing.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies

Federal Aviation
Administration

« OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000238709-13 **Sponsor:** Southern California Edison - WS

Details for Case : 10 0-EC 711-TSP-1 (B5A)

Show Project Summary

Case Status

ASN:	2013-AWP-2676-OE
Status:	Accepted
Public Comments:	None

Date Accepted:	05/08/2013
Date Determined:	
Letters:	None
Documents:	None
	Project Documents: None

Construction / Alteration Information

Notice Of:	Construction
Duration:	Permanent
If Temporary :	Months: Days:
Work Schedule - Start:	
Work Schedule - End:	

**For temporary cranes-Does the permanent structure require separate notice to the FAA? To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed. If it is not filed, please state the reason in the Description of Proposal.*

State Filing:

Structure Summary

Structure Type:	Other w/o Antenna
Structure Name:	10 0-EC 711-TSP-1 (B5A)
NOTAM Number:	
FCC Number:	
Prior ASN:	

Structure Details

Latitude:	33° 56' 0.00" N
Longitude:	116° 50' 27.81" W
Horizontal Datum:	NAD83
Site Elevation (SE):	2177 (nearest foot)
Structure Height (AGL):	130 (nearest foot)
Current Height (AGL): ** For notice of alteration or existing provide the current AGL height of the existing structure. Include details in the Description of Proposal*	(nearest foot)
Nacelle Height (AGL): ** For Wind Turbines 500ft AGL or greater*	(nearest foot)
Requested Marking/Lighting:	None
Other :	
Recommended Marking/Lighting:	
Current Marking/Lighting:	N/A Proposed Structure
Other :	☐
Nearest City:	Banning
Nearest State:	California
Description of Location: *On the Project Summary page upload any certified survey.*	THIS IS 8 of 36 TSP's. 26 of 54 TOTAL structures being filed in Banning. 18 are Lattice Steel Towers (LST), 36 are Tubular Steel Poles (TSP).
Description of Proposal:	Please refer to uploaded Map and Structure listing.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies

Federal Aviation Administration

« OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000338709-13

Sponsor: Southern California Edison - WS

Details for Case : 11 D-EC 71H-TSP-1 (85)

Show Project Summary

Case Status

ASN: 2013-AWP-2677-OE

Status: Accepted

Public Comments: None

Date Accepted: 05/08/2013

Date Determined:

Letters: None

Documents: None

Project Documents:
None

Construction / Alteration Information

Notice Of: Construction

Duration: Permanent

If Temporary : Months: Days:

Work Schedule - Start:

Work Schedule - End:

**For temporary cranes-Does the permanent structure require separate notice to the FAA?*
To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed.
If it is not filed, please state the reason in the Description of Proposal.

State Filing:

Structure Summary

Structure Type: Other w/o Antenna

Structure Name: 11 D-EC 71H-TSP-1 (85)

NOTAM Number:

FCC Number:

Prior ASN:

Structure Details

Latitude: 33° 55' 8.01" N

Longitude: 116° 50' 36.48" W

Horizontal Datum: NAD83

Site Elevation (SE): 2199 (nearest foot)

Structure Height (AGL): 130 (nearest foot)

Current Height (AGL): (nearest foot)
** For notice of alteration or existing provide the current*
AGL height of the existing structure.
Include details in the Description of Proposal

Nacelle Height (AGL): (nearest foot)
** For Wind Turbines 500ft AGL or greater*

Requested Marking/Lighting: None

Other :

Recommended Marking/Lighting:

Current Marking/Lighting: N/A Proposed Structure

Other : ☐

Nearest City: Banning

Nearest State: California

Description of Location: THIS IS 9 of 36 TSP's.
27 of 54 TOTAL structures being filed in Banning. 18 are Lattice Steel Towers (LST), 36 are Tubular Steel Poles (TSP).
On the Project Summary page upload any certified survey.

Description of Proposal: Please refer to uploaded Map and Structure listing.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies

Federal Aviation
Administration

» OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000238709-13

Sponsor: Southern California Edison - WS

Details for Case : 12 D-EC 71G-TSP-1 (84)

Show Project Summary

Case Status

ASN:	2013-AWP-2678-OE
Status:	Accepted
Public Comments:	None

Date Accepted:	05/06/2013
Date Determined:	
Letters:	None
Documents:	None
	Project Documents: None

Construction / Alteration Information

Notice Of:	Construction
Duration:	Permanent
If Temporary :	Months: Days:
Work Schedule - Start:	
Work Schedule - End:	

**For temporary cranes-Does the permanent structure require separate notice to the FAA?
To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed.
If it is not filed, please state the reason in the Description of Proposal.*

State Filing:

Structure Summary

Structure Type:	Other w/o Antenna
Structure Name:	12 D-EC 71G-TSP-1 (84)
NOTAM Number:	
FCC Number:	
Prior ASN:	

Structure Details

Latitude:	33° 56' 0.03" N
Longitude:	116° 50' 44.85" W
Horizontal Datum:	NAD83
Site Elevation (SE):	2210 (nearest foot)
Structure Height (AGL):	125 (nearest foot)
Current Height (AGL): ** For notice of alteration or existing provide the current AGL height of the existing structure. Include details in the Description of Proposal*	(nearest foot)
Nacelle Height (AGL): ** For Wind Turbines 500ft AGL or greater*	(nearest foot)
Requested Marking/Lighting:	None
Other :	
Recommended Marking/Lighting:	
Current Marking/Lighting:	N/A Proposed Structure
Other :	☐
Nearest City:	Banning
Nearest State:	California
Description of Location: *On the Project Summary page upload any certified survey.*	THIS IS 10 of 35 TSP's. 38 of 54 TOTAL structures being filed in Banning. 18 are Lattice Steel Towers (LST). 36 are Tubular Steel Poles (TSP).
Description of Proposal:	Please refer to uploaded Map and Structure listing.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies

Federal Aviation
Administration

» OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000238709-13

Sponsor: Southern California Edison - WS

Details for Case : 13 D-EC 71F-TSP-1 (83B)

Show Project Summary

Case Status

ASN:	2013-AWP-2679-OE
Status:	Accepted
Public Comments:	None

Date Accepted:	05/08/2013
Date Determined:	
Letters:	None
Documents:	None
	Project Documents: None

Construction / Alteration Information

Notice Of:	Construction
Duration:	Permanent
if Temporary :	Months: Days:
Work Schedule - Start:	
Work Schedule - End:	

**For temporary cranes-Does the permanent structure require separate notice to the FAA? To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed. If it is not filed, please state the reason in the Description of Proposal.*

State Filing:

Structure Summary

Structure Type:	Other w/o Antenna
Structure Name:	13 D-EC 71F-TSP-1 (83B)
NOTAM Number:	
FCC Number:	
Prior ASN:	

Structure Details

Latitude:	33° 56' 8.03" N
Longitude:	116° 50' 51.24" W
Horizontal Datum:	NAD83
Site Elevation (SE):	2237 (nearest foot)
Structure Height (AGL):	120 (nearest foot)
Current Height (AGL): ** For notice of alteration or existing provide the current AGL height of the existing structure. Include details in the Description of Proposal*	(nearest foot)
Nacelle Height (AGL): ** For Wind Turbines 500ft AGL or greater*	(nearest foot)
Requested Marking/Lighting:	None
Other :	
Recommended Marking/Lighting:	
Current Marking/Lighting:	N/A Proposed Structure
Other :	☐
Nearest City:	Banning
Nearest State:	California
Description of Location: *On the Project Summary page upload any certified survey.*	THIS IS 11 of 36 TSP's. 29 of 54 TOTAL structures being filed in Banning. 18 are Lattice Steel Towers (LST), 36 are Tubular Steel Poles (TSP).
Description of Proposal:	Please refer to uploaded Map and Structure listing.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies

Federal Aviation
Administration

« OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000238709-13

Sponsor: Southern California Edison - WS

Details for Case : 14 D-EC 71E-TSP-1 (83A)

Show Project Summary

Case Status

ASN:	2013-AWP-2680-OE
Status:	Accepted
Public Comments:	None

Date Accepted:	05/08/2013
Date Determined:	
Letters:	None
Documents:	None
	Project Documents: None

Construction / Alteration Information

Notice Of:	Construction
Duration:	Permanent
if Temporary :	Months: Days:
Work Schedule - Start:	
Work Schedule - End:	

**For temporary cranes-Does the permanent structure require separate notice to the FAA?*
To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed.
If it is not filed, please state the reason in the Description of Proposal.

State Filing:

Structure Summary

Structure Type:	Other w/o Antenna
Structure Name:	14 D-EC 71E-TSP-1 (83A)
NOTAM Number:	
FCC Number:	
Prior ASN:	

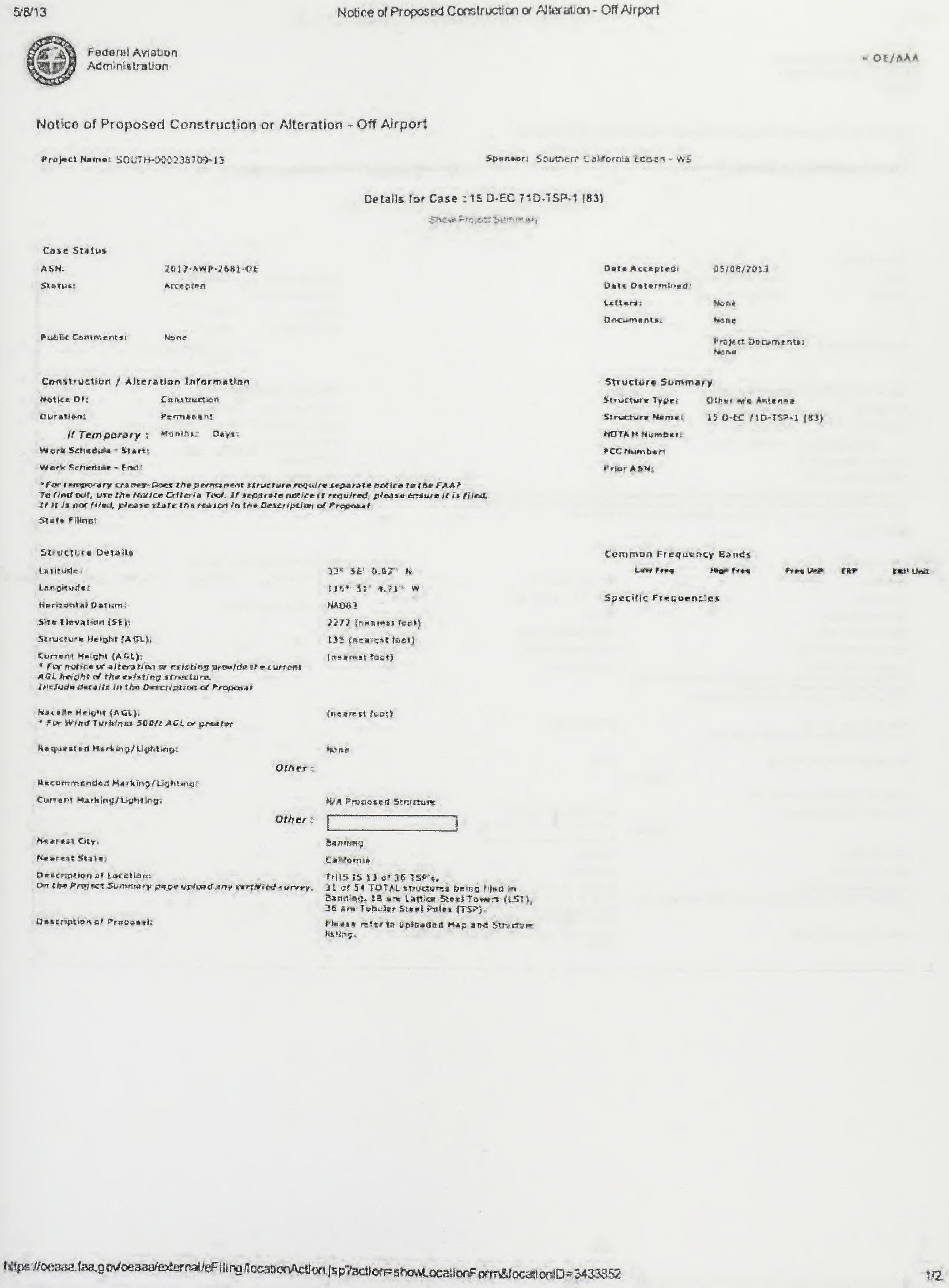
Structure Details

Latitude:	33° 55' 0.02" N
Longitude:	116° 50' 56.61" W
Horizontal Datum:	NAD83
Site Elevation (SE):	2250 (nearest foot)
Structure Height (AGL):	104 (nearest foot)
Current Height (AGL): ** For notice of alteration or existing provide the current AGL height of the existing structure.* *Include details in the Description of Proposal*	(nearest foot)
Nacelle Height (AGL): ** For Wind Turbines 500ft AGL or greater*	(nearest foot)
Requested Marking/Lighting:	None
Other :	
Recommended Marking/Lighting:	
Current Marking/Lighting:	N/A Proposed Structure
Other :	☐
Nearest City:	Banning
Nearest State:	California
Description of Location: *On the Project Summary page upload any certified survey.*	THIS IS 12 of 36 TSP's. 30 of 54 TOTAL structures being filed in Banning. 18 are Lattice Steel Towers (LST), 36 are Tubular Steel Poles (TSP).
Description of Proposal:	Please refer to uploaded Map and Structure listing.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies



Federal Aviation Administration

« OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000238709-13

Sponsor: Southern California Edison - WS

Details for Case : 15 D-EC 71D-TSP-1 (83)

Show Project Summary

Case Status

ASN: 2013-AWP-2681-OE
Status: Accepted
Public Comments: None

Date Accepted: 05/08/2013
Date Determined:
Letters: None
Documents: None
Project Documents:
None

Construction / Alteration Information

Notice Of: Construction
Duration: Permanent
If Temporary : Months: Days:
Work Schedule - Start:
Work Schedule - End:

**For temporary cranes-Does the permanent structure require separate notice to the FAA?
To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed.
If it is not filed, please state the reason in the Description of Proposal*

State Filing:

Structure Summary

Structure Type: Other w/o Antenna
Structure Name: 15 D-EC 71D-TSP-1 (83)
NOTAM Number:
FCC Number:
Prior ASN:

Structure Details

Latitude: 33° 56' 0.02" N
Longitude: 116° 51' 4.71" W
Horizontal Datum: NAD83
Site Elevation (SE): 2272 (nearest foot)
Structure Height (AGL): 135 (nearest foot)
Current Height (AGL): (nearest foot)
** For notice of alteration or existing provide the current AGL height of the existing structure.
Include details in the Description of Proposal*

Nacelle Height (AGL): (nearest foot)
** For Wind Turbines 500ft AGL or greater*

Requested Marking/Lighting: None
Other :
Recommended Marking/Lighting:
Current Marking/Lighting: N/A Proposed Structure
Other : ☐

Nearest City: Banning
Nearest State: California
Description of Location: THIS IS 13 of 36 TSP's. 31 of 54 TOTAL structures being filed in Banning. 18 are Lattice Steel Towers (LST), 36 are Tubular Steel Poles (TSP).
On the Project Summary page upload any certified survey.
Description of Proposal: Please refer to uploaded Map and Structure listing.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies

Federal Aviation
Administration

« OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000238709-13

Sponsor: Southern California Edison - WS

Details for Case : 16 D-EC 71C-TSP-1 (82)

Show Project Summary

Case Status

ASN: 2013-AWP-2682-OE
Status: Accepted
Public Comments: None

Date Accepted: 05/06/2013
Date Determined:
Letters: None
Documents: None
Project Documents:
None

Construction / Alteration Information

Notice Of: Construction
Duration: Permanent
if Temporary : **Months:** **Days:**
Work Schedule - Start:
Work Schedule - End:

****For temporary cranes-Does the permanent structure require separate notice to the FAA?***
To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed.
If it is not filed, please state the reason in the Description of Proposal.

State Filing:

Structure Summary

Structure Type: Other w/a Antenna
Structure Name: 16 D-EC 71C-TSP-1 (82)
NOTAM Number:
FCC Number:
Prior ASN:

Structure Details

Latitude: 33° 56' 0.03" N
Longitude: 116° 51' 13.02" W
Horizontal Datum: NAD83
Site Elevation (SE): 2293 (nearest foot)
Structure Height (AGL): 125 (nearest foot)
Current Height (AGL): (nearest foot)
** For notice of alteration or existing provide the current*
AGL height of the existing structure.
Include details in the Description of Proposal

Nacelle Height (AGL): (nearest foot)
** For Wind Turbines 500ft AGL or greater*

Requested Marking/Lighting: None
Other :
Recommended Marking/Lighting:
Current Marking/Lighting: N/A Proposed Structure
Other : ☐

Nearest City: Banning
Nearest State: California
Description of Location: THIS IS 14 of 36 TSP's.
On the Project Summary page upload any certified survey. 32 of 54 TOTAL structures being filed in Banning. 18 are Lattice Steel Towers (LST), 36 are Tubular Steel Poles (TSP).
Description of Proposal: Please refer to uploaded Map and Structure listing.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies

Federal Aviation
Administration

« OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000238709-13

Sponsor: Southern California Edison - WS

Details for Case : 17 D-EC 71B-TSP-1 (81A)

Show Project Summary

Case Status

ASN: 2013-AWP-2683-OE

Status: Accepted

Public Comments: None

Date Accepted: 05/08/2013

Date Determined:

Letters: None

Documents: None

Project Documents:
None

Construction / Alteration Information

Notice Of: Construction

Duration: Permanent

If Temporary : Months: Days:

Work Schedule - Start:

Work Schedule - End:

**For temporary cranes-Does the permanent structure require separate notice to the FAA?
To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed.
If it is not filed, please state the reason in the Description of Proposal.*

State Filing:

Structure Summary

Structure Type: Other w/o Antenna

Structure Name: 17 D-EC 71B-TSP-1 (81A)

NOTAM Number:

FCC Number:

Prior ASN:

Structure Details

Latitude: 33° 56' 6.06" N

Longitude: 116° 51' 17.77" W

Horizontal Datum: NAD83

Site Elevation (SE): 2327 (nearest foot)

Structure Height (AGL): 145 (nearest foot)

Current Height (AGL): (nearest foot)
** For notice of alteration or existing provide the current
AGL height of the existing structure.
Include details in the Description of Proposal*

Nacelle Height (AGL): (nearest foot)
** For Wind Turbines 500ft AGL or greater*

Requested Marking/Lighting: None

Other :

Recommended Marking/Lighting:

Current Marking/Lighting: N/A Proposed Structure

Other : ☐

Nearest City: Banning

Nearest State: California

Description of Location: THIS IS 13 of 36 TSP's,
33 of 54 TOTAL structures being filed in Banning. 18 are Lattice Steel Towers (LST), 36 are Tubular Steel Poles (TSP).
On the Project Summary page upload any certified survey.

Description of Proposal: Please refer to uploaded Map and Structure listing.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies

Federal Aviation
Administration

« OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000238709-13 **Sponsor:** Southern California Edison - WS

Details for Case : 18 D-EC 71A-TSP-1 (81)

Show Project Summary

Case Status

ASN:	2013-AWP-2694-OE
Status:	Accepted
Public Comments:	None

Date Accepted:	05/06/2013
Date Determined:	
Letters:	None
Documents:	None
	Project Documents: None

Construction / Alteration Information

Notice Of:	Construction
Duration:	Permanent
If Temporary :	**Months:** **Days:**
Work Schedule - Start:	
Work Schedule - End:	

****For temporary cranes-Does the permanent structure require separate notice to the FAA?***
To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed.
If it is not filed, please state the reason in the Description of Proposal.

State Filing:

Structure Summary

Structure Type:	Other w/o Antenna
Structure Name:	18 D-EC 71A-TSP-1 (81)
NOTAM Number:	
FCC Number:	
Prior ASN:	

Structure Details

Latitude:	33° 56' 33.11" N
Longitude:	116° 51' 22.60" W
Horizontal Datum:	NAD83
Site Elevation (SE):	2354 (nearest foot)
Structure Height (AGL):	145 (nearest foot)
Current Height (AGL): *** For notice of alteration or existing provide the current AGL height of the existing structure.*** ***Include details in the Description of Proposal***	(nearest foot)
Nacelle Height (AGL): *** For Wind Turbines 500ft AGL or greater***	(nearest foot)
Requested Marking/Lighting:	None
Other :	
Recommended Marking/Lighting:	
Current Marking/Lighting:	N/A Proposed Structure
Other :	☐
Nearest City:	Banning
Nearest State:	California
Description of Location: ***On the Project Summary page upload any certified survey.***	THIS IS 16 of 36 TSP's. 34 of 54 TOTAL structures being filed in Banning. 18 are Lattice Steel Towers (LST), 36 are Tubular Steel Poles (TSP).
Description of Proposal:	Please refer to uploaded Map and Structure listing.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies

Federal Aviation
Administration

« OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000238709-13

Sponsor: Southern California Edison - WS

Details for Case : 19 D-EC 71-TSP-1 (80)

Show Project Summary

Case Status

ASN: 2013-AWP-2665-OE

Status: Accepted

Date Accepted: 05/06/2013

Date Determined:

Letters: None

Documents: None

Project Documents:
None

Public Comments: None

Construction / Alteration Information

Notice Of: Construction

Duration: Permanent

If Temporary : **Months:** **Days:**

Work Schedule - Start:

Work Schedule - End:

****For temporary cranes-Does the permanent structure require separate notice to the FAA?***
To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed.
If it is not filed, please state the reason in the Description of Proposal.

State Filing:

Structure Summary

Structure Type: Other w/o Antenna

Structure Name: 19 D-EC 71-TSP-1 (80)

NOTAM Number:

FCC Number:

Prior ASN:

Structure Details

Latitude: 33° 56' 19.40" N

Longitude: 116° 51' 27.24" W

Horizontal Datum: NAD83

Site Elevation (SE): 2384 (nearest foot)

Structure Height (AGL): 125 (nearest foot)

Current Height (AGL): (nearest foot)
For notice of alteration or existing provide the current
AGL height of the existing structure.
Include details in the Description of Proposal

Nacelle Height (AGL): (nearest foot)
For Wind Turbines 500ft AGL or greater

Requested Marking/Lighting: None

Other :

Recommended Marking/Lighting:

Current Marking/Lighting: N/A Proposed Structure

Other : ☐

Nearest City: Banning

Nearest State: California

Description of Location: THIS IS 17 of 36 TSP's,
On the Project Summary page upload any certified survey. 35 of 54 TOTAL structures being filed in Banning. 18 are Lattice Steel Towers (LST), 36 are Tubular Steel Poles (TSP).

Description of Proposal: Please refer to uploaded Map and Structure listing.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies

Federal Aviation
Administration

» OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000239709-13 **Sponsor:** Southern California Edison - WS

Details for Case : 20 D-EC 70-TSP-1 (79A)

Show Project Summary

Case Status

ASN:	2013-AWP-2686-OE
Status:	Accepted
Public Comments:	None

Date Accepted:	05/08/2013
Date Determined:	
Letters:	None
Documents:	None
	Project Documents: None

Construction / Alteration Information

Notice Of:	Construction
Duration:	Permanent
If Temporary :	**Months:** **Days:**
Work Schedule - Start:	
Work Schedule - End:	

For temporary cranes-Does the permanent structure require separate notice to the FAA?
To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed.
If it is not filed, please state the reason in the Description of Proposal.

State Filing:

Structure Summary

Structure Type:	Other w/o Antenna
Structure Name:	20 D-EC 70-TSP-1 (79A)
NOTAM Number:	
FCC Number:	
Prior ASN:	

Structure Details

Latitude:	33° 56' 25.00" N
Longitude:	116° 51' 32.16" W
Horizontal Datum:	NAD83
Site Elevation (SE):	2412 (nearest foot)
Structure Height (AGL):	130 (nearest foot)
Current Height (AGL): **** For notice of alteration or existing provide the current AGL height of the existing structure.*** ***Include details in the Description of Proposal***	(nearest foot)
Nacelle Height (AGL): **** For Wind Turbines 500ft AGL or greater***	(nearest foot)
Requested Marking/Lighting:	None
Other :	
Recommended Marking/Lighting:	
Current Marking/Lighting:	N/A Proposed Structure
Other :	☐
Nearest City:	Banning
Nearest State:	California
Description of Location: ***On the Project Summary page upload any certified survey.***	THIS IS 18 of 36 TSP's. 36 of 54 TOTAL structures being filed in Banning. 18 are Lattice Steel Towers (LST), 36 are Tubular Steel Poles (TSP).
Description of Proposal:	Please refer to uploaded Map and Structure listing.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies

Federal Aviation
Administration

» OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000238709-13

Sponsor: Southern California Edison - WS

Details for Case : 30 D-C 168X-TSP-1 (30)

Show Project Summary

Case Status

ASN: 2013-AWP-2687-OE

Status: Accepted

Public Comments: None

Date Accepted: 05/08/2013

Date Determined:

Letters: None

Documents: None

Project Documents:
None

Construction / Alteration Information

Notice Of: Construction

Duration: Permanent

If Temporary : Months: Days:

Work Schedule - Start:

Work Schedule - End:

** For temporary cranes-Does the permanent structure require separate notice to the FAA?*
To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed.
If it is not filed, please state the reason in the Description of Proposal.

State Filing:

Structure Summary

Structure Type: Other w/o Antenna

Structure Name: 30 D-C 168X-TSP-1 (30)

NOTAM Number:

FCC Number:

Prior ASN:

Structure Details

Latitude: 33° 55' 58.70" N

Longitude: 116° 48' 30.00" W

Horizontal Datum: NAD83

Site Elevation (SE): 2070 (nearest foot)

Structure Height (AGL): 130 (nearest foot)

Current Height (AGL): (nearest foot)
** For notice of alteration or existing provide the current*
AGL height of the existing structure.
Include details in the Description of Proposal

Nacelle Height (AGL): (nearest foot)
** For Wind Turbines 500ft AGL or greater*

Requested Marking/Lighting: None

Other :

Recommended Marking/Lighting:

Current Marking/Lighting: N/A Proposed Structure

Other : ☐

Nearest City: Banning

Nearest State: California

Description of Location:
On the Project Summary page upload any certified survey.
THIS IS 19 of 36 TSP's.
37 of 54 TOTAL structures being filed in Banning. 18 are Lattice Steel Towers (LST). 36 are Tubular Steel Poles (TSP).

Description of Proposal: Please refer to uploaded Map and Structure listing.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies

Federal Aviation
Administration

» OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000238709-13 **Sponsor:** Southern California Edison - WS

Details for Case : 31 D-V 168W-TSP-1 (29A)

Show Project Summary

Case Status

ASN:	2013-AWP-2688-OE
Status:	Accepted
Public Comments:	None

Date Accepted:	05/08/2013
Date Determined:	
Letters:	None
Documents:	None
	Project Documents: None

Construction / Alteration Information

Notice Of:	Construction
Duration:	Permanent
If Temporary :	Months: Days:
Work Schedule - Start:	
Work Schedule - End:	

** For temporary cranes-Does the permanent structure require separate notice to the FAA?*
To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed.
If it is not filed, please state the reason in the Description of Proposal.

State Filing:

Structure Summary

Structure Type:	Other w/o Antenna
Structure Name:	31 D-V 168W-TSP-1 (29A)
NOTAM Number:	
FCC Number:	
Prior ASN:	

Structure Details

Latitude:	33° 55' 59.11" N
Longitude:	116° 49' 37.09" W
Horizontal Datum:	NAD83
Site Elevation (SE):	2094 (nearest foot)
Structure Height (AGL):	130 (nearest foot)
Current Height (AGL): ** For notice of alteration or existing provide the current AGL height of the existing structure.* *Include details in the Description of Proposal*	(nearest foot)
Nacelle Height (AGL): ** For Wind Turbines 500ft AGL or greater*	(nearest foot)
Requested Marking/Lighting:	None
Other :	
Recommended Marking/Lighting:	
Current Marking/Lighting:	N/A Proposed Structure
Other :	☐
Nearest City:	Banning
Nearest State:	California
Description of Location: *On the Project Summary page upload any certified survey.*	THIS IS 20 of 36 TSP's. 38 of 54 TOTAL structures being filed in Banning. 18 are Lattice Steel Towers (LST). 36 are Tubular Steel Poles (TSP).
Description of Proposal:	Please refer to uploaded Map and Structure listing.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies

Federal Aviation
Administration

« OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000238709-13 **Sponsor:** Southern California Edison - WS

Details for Case : 32 D-V 168V-TSP-1 (29)

Show Project Summary

Case Status

ASN:	2013-AWP-2689-OE
Status:	Accepted
Public Comments:	None

Date Accepted:	05/08/2013
Date Determined:	
Letters:	None
Documents:	None
	Project Documents: None

Construction / Alteration Information

Notice Of:	Construction
Duration:	Permanent
If Temporary :	Months: Days:
Work Schedule - Start:	
Work Schedule - End:	

**For temporary cranes-Does the permanent structure require separate notice to the FAA? To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed. If it is not filed, please state the reason in the Description of Proposal.*

State Filing:

Structure Summary

Structure Type:	Other w/o Antenna
Structure Name:	32 D-V 168V-TSP-1 (29)
NOTAM Number:	
FCC Number:	
Prior ASN:	

Structure Details

Latitude:	33° 55' 59.42" N
Longitude:	116° 49' 42.50" W
Horizontal Datum:	NAD83
Site Elevation (SE):	2091 (nearest foot)
Structure Height (AGL):	120 (nearest foot)
Current Height (AGL): ** For notice of alteration or existing provide the current AGL height of the existing structure. Include details in the Description of Proposal*	(nearest foot)
Nacelle Height (AGL): ** For Wind Turbines 500ft AGL or greater*	(nearest foot)
Requested Marking/Lighting:	None
Other :	
Recommended Marking/Lighting:	
Current Marking/Lighting:	N/A Proposed Structure
Other :	☐
Nearest City:	Banning
Nearest State:	California
Description of Location: *On the Project Summary page upload any certified survey.*	THIS IS 23 of 36 TSP's. 39 of 54 TOTAL structures being filed in Banning. 18 are Lattice Steel Towers (LST), 36 are Tubular Steel Poles (TSP).
Description of Proposal:	Please refer to uploaded Map and Structure listing.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies

Federal Aviation Administration

« OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000238709-13 **Sponsor:** Southern California Edison - WS

Details for Case : D-V 168U-TSP-1 (28)

Show Project Summary

Case Status

ASN:	2013-AWP-2690-OE	**Date Accepted:**	05/08/2013
Status:	Accepted	**Date Determined:**	
		Letters:	None
		Documents:	None
Public Comments:	None		Project Documents: None

Construction / Alteration Information

Notice Of:	Construction
Duration:	Permanent
If Temporary :	**Months:** **Days:**
Work Schedule - Start:	
Work Schedule - End:	

Structure Summary

Structure Type:	Other w/o Antenna
Structure Name:	D-V 168U-TSP-1 (28)
NOTAM Number:	
FCC Number:	
Prior ASN:	

**For temporary cranes-Does the permanent structure require separate notice to the FAA? To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed. If it is not filed, please state the reason in the Description of Proposal.*

State Filing:

Structure Details

Latitude:	33° 55' 55.48" N
Longitude:	116° 49' 50.63" W
Horizontal Datum:	NAD83
Site Elevation (SE):	2099 (nearest foot)
Structure Height (AGL):	125 (nearest foot)
Current Height (AGL): ** For notice of alteration or existing provide the current AGL height of the existing structure.* *Include details in the Description of Proposal*	(nearest foot)
Nacelle Height (AGL): ** For Wind Turbines 500ft AGL or greater*	(nearest foot)
Requested Marking/Lighting:	None
Other :	
Recommended Marking/Lighting:	
Current Marking/Lighting:	N/A Proposed Structure
Other :	
Nearest City:	Banning
Nearest State:	California
Description of Location: *On the Project Summary page upload any certified survey.*	THIS IS 22 of 36 TSP's. 40 of 54 TOTAL structures being filed in Banning. 18 are Lattice Steel Towers (LST), 36 are Tubular Steel Poles (TSP).
Description of Proposal:	Please refer to uploaded Map and Structure listing.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies

Federal Aviation
Administration

« OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000238709-13 **Sponsor:** Southern California Edison - WS

Details for Case : 34 D-V 16BT-TSP-1 (27)

Show Printed Summary

Case Status

ASN:	2013-AWP-2691-OE
Status:	Accepted
Public Comments:	None

Date Accepted:	05/08/2013
Date Determined:	
Letters:	None
Documents:	None
	Project Documents: None

Construction / Alteration Information

Notice Of:	Construction
Duration:	Permanent
If Temporary :	Months: Days:
Work Schedule - Start:	
Work Schedule - End:	

**For temporary cranes-Does the permanent structure require separate notice to the FAA?*
To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed.
If it is not filed, please state the reason in the Description of Proposal.

State Filing:

Structure Summary

Structure Type:	Other w/o Antenna
Structure Name:	34 D-V 16BT-TSP-1 (27)
NOTAM Number:	
FCC Number:	
Prior ASN:	

Structure Details

Latitude:	33° 55' 59.48" N
Longitude:	116° 50' 2.07" W
Horizontal Datum:	NAD83
Site Elevation (SE):	2119 (nearest foot)
Structure Height (AGL):	125 (nearest foot)
Current Height (AGL): ** For notice of alteration or existing provide the current AGL height of the existing structure.* *Include details in the Description of Proposal*	(nearest foot)
Nacelle Height (AGL): ** For Wind Turbines 500ft AGL or greater*	(nearest foot)
Requested Marking/Lighting:	None
Other :	
Recommended Marking/Lighting:	
Current Marking/Lighting:	N/A Proposed Structure
Other :	
Nearest City:	Banning
Nearest State:	California
Description of Location: *On the Project Summary page upload any certified survey.*	THIS IS 23 of 36 TSP's. 41 of 54 TOTAL structures being filed in Banning. 18 are Lattice Steel Towers (LST). 36 are Tubular Steel Poles (TSP).
Description of Proposal:	Please refer to uploaded Map and Structure listing.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies

Federal Aviation
Administration

« OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000238709-13 **Sponsor:** Southern California Edison - WS

Details for Case : 35 D-V 168S-TSP-1 (26)

Show Project Summary

Case Status

ASN:	2013-AWP-2692-OE
Status:	Accepted
Public Comments:	None

Date Accepted:	05/08/2013
Date Determined:	
Letters:	None
Documents:	None
	Project Documents: None

Construction / Alteration Information

Notice Of:	Construction
Duration:	Permanent
If Temporary :	Months: Days:
Work Schedule - Start:	
Work Schedule - End:	

**For temporary cranes-Does the permanent structure require separate notice to the FAA?*
To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed.
If it is not filed, please state the reason in the Description of Proposal.

State Filing:

Structure Summary

Structure Type:	Other w/o Antenna
Structure Name:	35 D-V 168S-TSP-1 (26)
NOTAM Number:	
FCC Number:	
Prior ASN:	

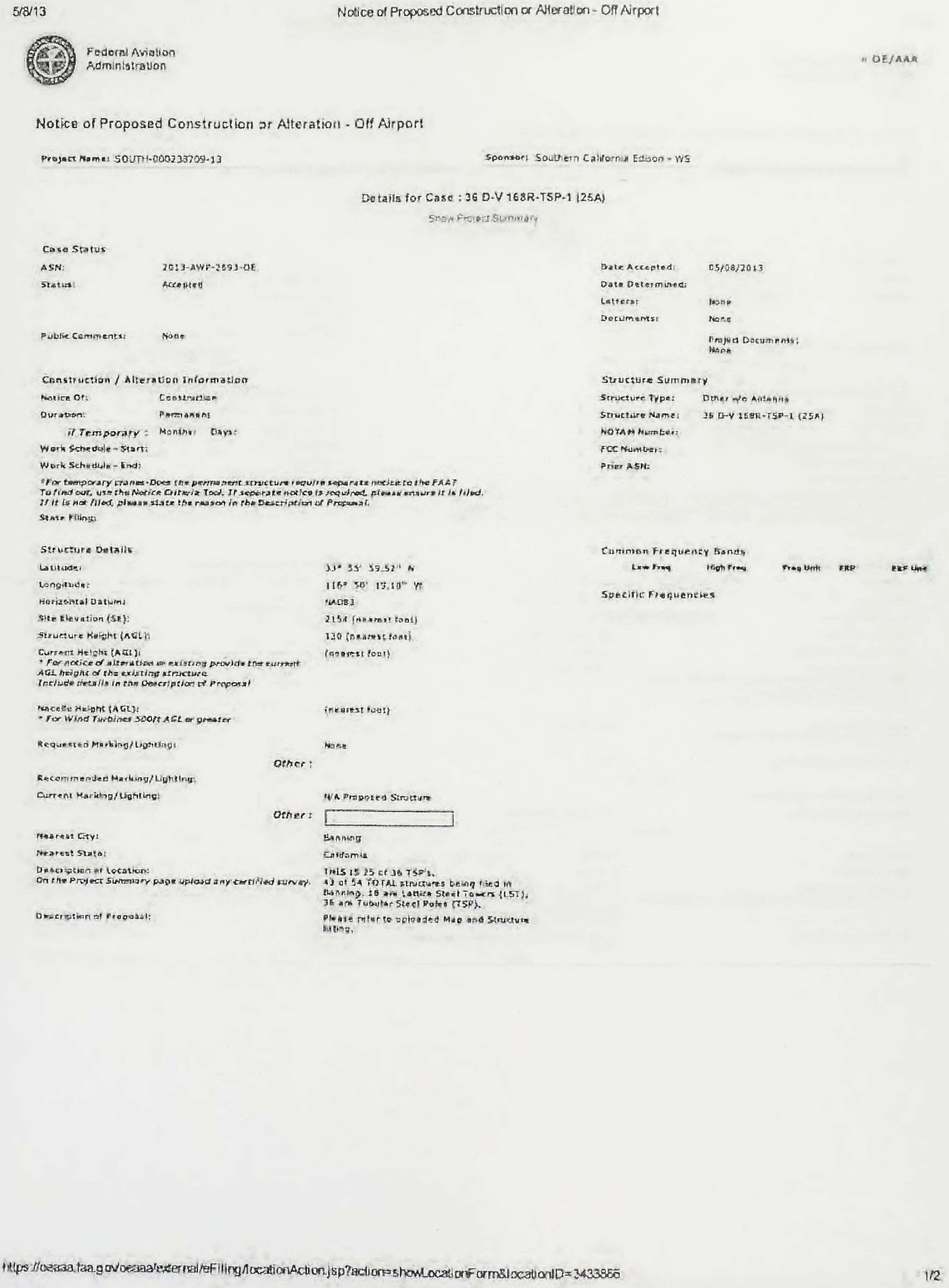
Structure Details

Latitude:	33° 55' 59.51" N
Longitude:	116° 50' 10.78" W
Horizontal Datum:	NAD83
Site Elevation (SE):	2137 (nearest foot)
Structure Height (AGL):	175 (nearest foot)
Current Height (AGL): ** For notice of alteration or existing provide the current AGL height of the existing structure.* *Include details in the Description of Proposal*	(nearest foot)
Nacelle Height (AGL): ** For Wind Turbines 500ft AGL or greater*	(nearest foot)
Requested Marking/Lighting:	None
Other :	
Recommended Marking/Lighting:	
Current Marking/Lighting:	N/A Proposed Structure
Other :	☐
Nearest City:	Banning
Nearest State:	California
Description of Location: *On the Project Summary page upload any certified survey.*	THIS IS 24 of 36 TSP's. 42 of 54 TOTAL structures being filed in Banning. 18 are Lattice Steel Towers (LST), 36 are Tubular Steel Poles (TSP).
Description of Proposal:	Please refer to uploaded Map and Structure listing.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies



Federal Aviation Administration

» OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000233709-13 **Sponsor:** Southern California Edison - WS

Details for Case : 36 D-V 168R-TSP-1 (25A)

Show Project Summary

Case Status

ASN:	2013-AWP-2593-OE
Status:	Accepted
Public Comments:	None

Date Accepted:	05/08/2013
Date Determined:	
Letters:	None
Documents:	None
	Project Documents: None

Construction / Alteration Information

Notice Of:	Construction
Duration:	Permanent
if Temporary :	Months: Days:
Work Schedule - Start:	
Work Schedule - End:	

**For temporary cranes-Does the permanent structure require separate notice to the FAA? To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed. If it is not filed, please state the reason in the Description of Proposal.*

State Filing:

Structure Summary

Structure Type:	Other w/o Antenna
Structure Name:	36 D-V 168R-TSP-1 (25A)
NOTAM Number:	
FCC Number:	
Prior ASN:	

Structure Details

Latitude:	33° 55' 59.52" N
Longitude:	116° 50' 19.10" W
Horizontal Datum:	NAD83
Site Elevation (SE):	2154 (nearest foot)
Structure Height (AGL):	130 (nearest foot)
Current Height (AGL): ** For notice of alteration or existing provide the current AGL height of the existing structure. Include details in the Description of Proposal*	(nearest foot)
Nacelle Height (AGL): ** For Wind Turbines 500ft AGL or greater*	(nearest foot)
Requested Marking/Lighting:	None
Other :	
Recommended Marking/Lighting:	
Current Marking/Lighting:	N/A Proposed Structure
Other :	
Nearest City:	Banning
Nearest State:	California
Description of Location: *On the Project Summary page upload any certified survey.*	THIS IS 25 of 36 TSP's. 43 of 54 TOTAL structures being filed in Banning. 18 are Lattice Steel Towers (LST), 36 are Tubular Steel Poles (TSP).
Description of Proposal:	Please refer to uploaded Map and Structure listing.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies

Federal Aviation
Administration

» OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000238709-13 **Sponsor:** Southern California Edison - WS

Details for Case : 37 D-V 168Q-TSP-1 (25)

Show Project Summary

Case Status

ASN:	2013-AWP-2694-OE	Date Accepted:	05/08/2013
Status:	Accepted	Date Determined:	
		Letters:	None
		Documents:	None
Public Comments:	None		Project Documents: None

Construction / Alteration Information

Notice Of:	Construction
Duration:	Permanent
if Temporary :	Months: Days:
Work Schedule - Start:	
Work Schedule - End:	

**For temporary cranes-Does the permanent structure require separate notice to the FAA? To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed. If it is not filed, please state the reason in the Description of Proposal.*

State Filing:

Structure Summary

Structure Type:	Other w/o Antenna
Structure Name:	37 D-V 168Q-TSP-1 (25)
NOTAM Number:	
FCC Number:	
Prior ASN:	

Structure Details

Latitude:	33° 55' 59.50" N
Longitude:	116° 50' 27.81" W
Horizontal Datum:	NAD83
Site Elevation (SE):	2176 (nearest foot)
Structure Height (AGL):	130 (nearest foot)
Current Height (AGL): ** For notice of alteration or existing provide the current AGL height of the existing structure. Include details in the Description of Proposal*	(nearest foot)
Nacelle Height (AGL): ** For Wind Turbines 500ft AGL or greater*	(nearest foot)
Requested Marking/Lighting:	None
Other :	
Recommended Marking/Lighting:	
Current Marking/Lighting:	N/A Proposed Structure
Other :	☐
Nearest City:	Banning
Nearest State:	California
Description of Location: *On the Project Summary page upload any certified survey*	THIS IS 20 of 36 TSP's. 44 of 54 TOTAL structures being filed in Banning. 18 are Lattice Steel Towers (LST), 36 are Tubular Steel Poles (TSP).
Description of Proposal:	Please refer to uploaded Map and Structure listing.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies

Federal Aviation
Administration

» OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000238709-13

Sponsor: Southern California Edison - WS

Details for Case : 38 D-V 168P-TSP-1 (24)

Show Project Summary

Case Status

ASN:	2013-AWP-2695-OE
Status:	Accepted
Public Comments:	None

Date Accepted:	05/08/2013
Date Determined:	
Letters:	None
Documents:	None
	Project Documents: None

Construction / Alteration Information

Notice Of:	Construction
Duration:	Permanent
if Temporary :	Months: Days:
Work Schedule - Start:	
Work Schedule - End:	

**For temporary cranes-Does the permanent structure require separate notice to the FAA? To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed. If it is not filed, please state the reason in the Description of Proposal.*

State Filing:

Structure Summary

Structure Type:	Other w/o Antenna
Structure Name:	38 D-V 168P-TSP-1 (24)
NOTAM Number:	
FCC Number:	
Prior ASN:	

Structure Details

Latitude:	33° 55' 54.51" N
Longitude:	116° 50' 36.48" W
Horizontal Datum:	NAD83
Site Elevation (SE):	2198 (nearest foot)
Structure Height (AGL):	130 (nearest foot)
Current Height (AGL): ** For notice of alteration or existing provide the current AGL height of the existing structure.* *Include details in the Description of Proposal*	(nearest foot)
Nacelle Height (AGL): ** For Wind Turbines 500ft AGL or greater*	(nearest foot)
Requested Marking/Lighting:	None
Other :	
Recommended Marking/Lighting:	
Current Marking/Lighting:	N/A Proposed Structure
Other :	☐
Nearest City:	Banning
Nearest State:	California
Description of Location: *On the Project Summary page upload any certified survey.*	THIS IS 27 of 36 TSP's, 45 of 54 TOTAL structures being filed in Banning. 18 are Lattice Steel Towers (LST), 36 are Tubular Steel Poles (TSP).
Description of Proposal:	Please refer to uploaded Map and Structure listing.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies

Federal Aviation
Administration

« OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000238709-13

Sponsor: Southern California Edison - WS

Details for Case : 39 D-V 1680-TSP-1 (23)

Show Project Summary

Case Status

ASN: 2013-AWP-2695-OE

Status: Accepted

Public Comments: None

Date Accepted: 05/08/2013

Date Determined:

Letters: None

Documents: None

Project Documents:
None

Construction / Alteration Information

Notice Of: Construction

Duration: Permanent

if Temporary : Months: Days:

Work Schedule - Start:

Work Schedule - End:

**For temporary cranes-Does the permanent structure require separate notice to the FAA?*
To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed.
If it is not filed, please state the reason in the Description of Proposal.

State Filing:

Structure Summary

Structure Type: Other WS Antenna

Structure Name: 39 D-V 1680-TSP-1 (23)

NOTAM Number:

FCC Number:

Prior ASN:

Structure Details

Latitude: 33° 55' 59.52" N

Longitude: 116° 50' 44.85" W

Horizontal Datum: NAD83

Site Elevation (SE): 2217 (nearest foot)

Structure Height (AGL): 130 (nearest foot)

Current Height (AGL): (nearest foot)
** For notice of alteration or existing provide the current AGL height of the existing structure.*
Include details in the Description of Proposal

Nacelle Height (AGL): (nearest foot)
** For Wind Turbines 500ft AGL or greater*

Requested Marking/Lighting: None

Other :

Recommended Marking/Lighting:

Current Marking/Lighting: N/A Proposed Structure

Other : ☐

Nearest City: Banning

Nearest State: California

Description of Location: THIS IS 28 of 36 TSP's:
46 of 54 TOTAL structures being filed in Banning. 18 are Lattice Steel Towers (LST). 36 are Tubular Steel Poles (TSP).
On the Project Summary page upload any certified survey.

Description of Proposal: Please refer to uploaded Map and Structure listing.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies

Federal Aviation
Administration

» OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000238709-13

Sponsor: Southern California Edison - WS

Details for Case : 40 D-V 168N-TSP-1 (22B)

Show Project Summary

Case Status

ASN: 2013-AWP-2697-OE

Status: Accepted

Public Comments: None

Date Accepted: 05/08/2013

Date Determined:

Letters: None

Documents: None

Project Documents: None

Construction / Alteration Information

Notice Of: Construction

Duration: Permanent

if Temporary : Months: Days:

Work Schedule - Start:

Work Schedule - End:

**For temporary cranes-Does the permanent structure require separate notice to the FAA? To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed. If it is not filed, please state the reason in the Description of Proposal.*

State Filing:

Structure Summary

Structure Type: Other w/o Antenna

Structure Name: 40 D-V 168N-TSP-1 (22B)

NOTAM Number:

FCC Number:

Prior ASN:

Structure Details

Latitude: 33° 55' 59.54" N

Longitude: 116° 50' 51.75" W

Horizontal Datum: NAD83

Site Elevation (SE): 2734 (nearest foot)

Structure Height (AGL): 170 (nearest foot)

Current Height (AGL): (nearest foot)
** For notice of alteration or existing provide the current AGL height of the existing structure.*
Include details in the Description of Proposal

Nacelle Height (AGL): (nearest foot)
** For Wind Turbines 500ft AGL or greater*

Requested Marking/Lighting: None

Other :

Recommended Marking/Lighting:

Current Marking/Lighting: N/A Proposed Structure

Other : ☐

Nearest City: Banning

Nearest State: California

Description of Location: THIS IS 29 of 36 TSP's.
On the Project Summary page upload any certified survey. 47 of 54 TOTAL structures being filed in Banning. 18 are Lattice Steel Towers (LST), 36 are Tubular Steel Poles (TSP).

Description of Proposal: Please refer to uploaded Map and Structure listing.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies

Federal Aviation
Administration

« OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000238709-13

Sponsor: Southern California Edison - WS

Details for Case : 41 D-V 168M-TSP-1 (22A)

Show Project Summary

Case Status

ASN	2013-AWP-2698-OE
Status:	Accepted
Public Comments:	None

Date Accepted:	05/08/2013
Date Determined:	
Letters:	None
Documents:	None
	Project Documents: None

Construction / Alteration Information

Notice Of:	Construction
Duration:	Permanent
If Temporary :	Months: Days:
Work Schedule - Start:	
Work Schedule - End:	

****For temporary cranes-Does the permanent structure require separate notice to the FAA?
To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed.
If it is not filed, please state the reason in the Description of Proposal.***

State Filing:

Structure Summary

Structure Type:	Other w/o Antenna
Structure Name:	41 D-V 168M-TSP-1 (22A)
NOTAM Number:	
FCC Number:	
Prior ASN:	

Structure Details

Latitude:	33° 55' 59.34" N
Longitude:	116° 50' 56.61" W
Horizontal Datum:	NAD83
Site Elevation (SE):	2250 (nearest foot)
Structure Height (AGL):	104 (nearest foot)
Current Height (AGL): ** For notice of alteration or existing provide the current AGL height of the existing structure.* *Include details in the Description of Proposal*	(nearest foot)
Nacelle Height (AGL): ** For Wind Turbines 500ft AGL or greater*	(nearest foot)
Requested Marking/Lighting:	None
Other :	
Recommended Marking/Lighting:	
Current Marking/Lighting:	N/A Proposed Structure
Other :	☐
Nearest City:	Banning
Nearest State:	California
Description of Location: *On the Project Summary page upload any certified survey.*	THIS IS 30 of 36 TSP's. 48 of 54 TOTAL structures being filed in Banning. 18 are Lattice Steel Towers (LST). 30 are Tubular Steel Poles (TSP).
Description of Proposal:	Please refer to uploaded Map and Structure listing.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies

Federal Aviation
Administration

« OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000238709-13

Sponsor: Southern California Edison - WS

Details for Case : 42 D-V 168L-TSP-1 (22)

Show Project Summary

Case Status

ASN: 2013-AWP-2699-OE
Status: Accepted

Public Comments: None

Date Accepted: 05/08/2013
Date Determined:
Letters: None
Documents: None
Project Documents:
None

Construction / Alteration Information

Notice Of: Construction
Duration: Permanent
If Temporary : Months: Days:
Work Schedule - Start:
Work Schedule - End:

**For temporary cranes-Does the permanent structure require separate notice to the FAA?*
To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed.
If it is not filed, please state the reason in the Description of Proposal.

State Filing:

Structure Summary

Structure Type: Other w/o Antenna
Structure Name: 42 D-V 168L-TSP-1 (22)
NOTAM Number:
FCC Number:
Prior ASN:

Structure Details

Latitude: 33° 55' 59.53" N
Longitude: 116° 51' 4.72" W
Horizontal Datum: NAD83
Site Elevation (SE): 2271 (nearest foot)
Structure Height (AGL): 130 (nearest foot)
Current Height (AGL): (nearest foot)
** For notice of alteration or existing provide the current AGL height of the existing structure.*
Include details in the Description of Proposal

Nacelle Height (AGL): (nearest foot)
** For Wind Turbines 500ft AGL or greater*

Requested Marking/Lighting: None
Other :
Recommended Marking/Lighting:
Current Marking/Lighting: N/A Proposed Structure
Other : ☐

Nearest City: Banning
Nearest State: California
Description of Location: THIS IS 31 of 36 TSP's.
49 of 54 TOTAL structures being filed as Banning. 18 are Lattice Steel Towers (LST), 36 are Tubular Steel Poles (TSP).
On the Project Summary page upload any certified survey.

Description of Proposal: Please refer to uploaded Map and Structure listing.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies

Federal Aviation
Administration

« OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000238709-13

Sponsor: Southern California Edison - WS

Details for Case : 43 D-V 168K-TSP-1 (21)

Show Project Summary

Case Status

ASN: 2013-AWP-2700-OE

Status: Accepted

Public Comments: None

Date Accepted: 05/08/2013

Date Determined:

Letters: None

Documents: None

Project Documents:
None

Construction / Alteration Information

Notice Of: Construction

Duration: Permanent

If Temporary : Months: Days:

Work Schedule - Start:

Work Schedule - End:

**For temporary cranes-Does the permanent structure require separate notice to the FAA?*
To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed.
If it is not filed, please state the reason in the Description of Proposal.

State Filing:

Structure Summary

Structure Type: Other w/o Antenna

Structure Name: 43 D-V 168K-TSP-1 (21)

NOTAM Number:

FCC Number:

Prior ASN:

Structure Details

Latitude: 33° 55' 59.53" N

Longitude: 116° 51' 13.35" W

Horizontal Datum: NAD83

Site Elevation (SE): 2292 (nearest foot)

Structure Height (AGL): 125 (nearest foot)

Current Height (AGL): (nearest foot)
** For notice of alteration or existing provide the current*
AGL height of the existing structure.
Include details in the Description of Proposal

Nacelle Height (AGL): (nearest foot)
** For Wind Turbines 500ft AGL or greater*

Requested Marking/Lighting: None

Other :

Recommended Marking/Lighting:

Current Marking/Lighting: N/A Proposed Structure

Other : ☐

Nearest City: Banning

Nearest State: California

Description of Location:
On the Project Summary page upload any certified survey.
THIS IS 32 of 36 TSP's.
50 of 54 TOTAL structures being filed in Banning. 18 are Lattice Steel Towers (LST), 36 are Tubular Steel Poles (TSP).

Description of Proposal: Please refer to uploaded Map and Structure listing.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies

Federal Aviation
Administration

» OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000238709-13 **Sponsor:** Southern California Edison - WS

Details for Case : 44 D-V 168J-TSP-1 (20A)

Show Project Summary

Case Status

ASN:	2013-AWP-2701-OE
Status:	Accepted
Public Comments:	None

Date Accepted:	05/08/2013
Date Determined:	
Letters:	None
Documents:	None
	Project Documents: None

Construction / Alteration Information

Notice Of:	Construction
Duration:	Permanent
If Temporary :	Months: Days:
Work Schedule - Start:	
Work Schedule - End:	

***For temporary cranes-Does the permanent structure require separate notice to the FAA?*
To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed.
*If it is not filed, please state the reason in the Description of Proposal.***

State Filing:

Structure Summary

Structure Type:	Other w/o Antenna
Structure Name:	44 D-V 168J-TSP-1 (20A)
NOTAM Number:	
FCC Number:	
Prior ASN:	

Structure Details

Latitude:	33° 56' 6.42" N
Longitude:	116° 51' 18.78" W
Horizontal Datum:	NAD83
Site Elevation (SE):	2328 (nearest foot)
Structure Height (AGL):	145 (nearest foot)
Current Height (AGL): ** For notice of alteration or existing provide the current AGL height of the existing structure. Include details in the Description of Proposal*	(nearest foot)
Nacelle Height (AGL): ** For Wind Turbines 500ft AGL or greater*	(nearest foot)
Requested Marking/Lighting:	None
Other :	
Recommended Marking/Lighting:	
Current Marking/Lighting:	N/A Proposed Structure
Other :	☐
Nearest City:	Banning
Nearest State:	California
Description of Location: *On the Project Summary page upload any certified survey.*	THIS IS 33 of 36 TSP's. 51 of 54 TOTAL structures being filed in Banning. 18 are Lattice Steel Towers (LST), 36 are Tubular Steel Poles (TSP).
Description of Proposal:	Please refer to uploaded Map and Structure listing.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies

Federal Aviation
Administration

« OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000238709-13

Sponsor: Southern California Edison - WS

Details for Case : 45 D-V 168I-TSP-1 (20)

Show Project Summary

Case Status

ASN: 2013-AWP-2702-OE
Status: Accepted

Public Comments: None

Date Accepted: 05/08/2013
Date Determined:
Letters: None
Documents: None
Project Documents:
None

Construction / Alteration Information

Notice Of: Construction
Duration: Permanent
If Temporary : Months: Days:
Work Schedule - Start:
Work Schedule - End:

**For temporary cranes-Does the permanent structure require separate notice to the FAA?*
To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed.
If it is not filed, please state the reason in the Description of Proposal.

State Filing:

Structure Summary

Structure Type: Other w/o Antenna
Structure Name: 45 D-V 168I-TSP-1 (20)
NOTAM Number:
FCC Number:
Prior ASN:

Structure Details

Latitude: 33° 56' 12.85" N
Longitude: 116° 51' 23.18" W
Horizontal Datum: NAD83
Site Elevation (SE): 2359 (nearest foot)
Structure Height (AGL): 145 (nearest foot)
Current Height (AGL): (nearest foot)
** For notice of alteration or existing provide the current*
AGL height of the existing structure.
Include details in the Description of Proposal

Nacelle Height (AGL): (nearest foot)
** For Wind Turbines 500ft AGL or greater*

Requested Marking/Lighting: None
Other :
Recommended Marking/Lighting:
Current Marking/Lighting: N/A Proposed Structure
Other : ☐

Nearest City: Banning
Nearest State: California
Description of Location:
On the Project Summary page upload any certified survey.
THIS IS 34 of 36 TSP's.
52 of 54 TOTAL structures being filed in Banning. 18 are Lattice Steel Towers (LST), 36 are Tubular Steel Poles (TSP).

Description of Proposal: Please refer to uploaded Map and Structure listing.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies

Federal Aviation
Administration

» OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000238709-13

Sponsor: Southern California Edison - WS

Details for Case : 46 D-V 168H-TSP-1 (19)

Show Project Summary

Case Status

ASN:	2013-AWP-2703-OE	Date Accepted:	05/08/2013
Status:	Accepted	Date Determined:	
		Letters:	None
		Documents:	None
Public Comments:	None		Project Documents: None

Construction / Alteration Information

Notice Of: Construction
Duration: Permanent
If Temporary : Months: Days:
Work Schedule - Start:
Work Schedule - End:

**For temporary cranes-Does the permanent structure require separate notice to the FAA? To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed. If it is not filed, please state the reason in the Description of Proposal.*

State Filing:

Structure Summary

Structure Type: Other w/o Antenna
Structure Name: 46 D-V 168H-TSP-1 (19)
NOTAM Number:
FCC Number:
Prior ASN:

Structure Details

Latitude:	33° 56' 19.27" N
Longitude:	116° 51' 27.75" W
Horizontal Datum:	NAD83
Site Elevation (SE):	2385 (nearest foot)
Structure Height (AGL):	130 (nearest foot)
Current Height (AGL): ** For notice of alteration or existing provide the current AGL height of the existing structure.* *Include details in the Description of Proposal*	(nearest foot)
Nacelle Height (AGL): ** For Wind Turbines 500ft AGL or greater*	(nearest foot)
Requested Marking/Lighting:	None
Other :	
Recommended Marking/Lighting:	
Current Marking/Lighting:	N/A Proposed Structure
Other :	☐
Nearest City:	Banning
Nearest State:	California
Description of Location: *On the Project Summary page upload any certified survey.*	THIS IS 35 of 36 TSP's. 53 of 54 TOTAL structures being filed in Banning. 18 are Lattice Steel Towers (LST), 36 are Tubular Steel Poles (TSP).
Description of Proposal:	Please refer to uploaded Map and Structure listing.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies

Federal Aviation
Administration

» OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Project Name: SOUTH-000238709-13

Sponsor: Southern California Edison - WS

Details for Case : 47 D-V 168G-TSP-1 (18A)

Show Project Summary

Case Status

ASN: 2013-AWP-2704-OE

Status: Accepted

Public Comments: None

Date Accepted: 05/08/2013

Date Determined:

Letters: None

Documents: None

Project Documents:
None

Construction / Alteration Information

Notice Of: Construction

Duration: Permanent

if Temporary : Months: Days:

Work Schedule - Start:

Work Schedule - End:

**For temporary cranes-Does the permanent structure require separate notice to the FAA?
To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed.
If it is not filed, please state the reason in the Description of Proposal.*

State Filing:

Structure Summary

Structure Type: Other w/o Antenna

Structure Name: 47 D-V 168G-TSP-1 (18A)

NOTAM Number:

FCC Number:

Prior ASN:

Structure Details

Latitude: 33° 56' 24.83" N

Longitude: 116° 51' 32.60" W

Horizontal Datum: NAD83

Site Elevation (SE): 2413 (nearest foot)

Structure Height (AGL): 150 (nearest foot)

Current Height (AGL): (nearest foot)
** For notice of alteration or existing provide the current
AGL height of the existing structure.
Include details in the Description of Proposal*

Nacelle Height (AGL): (nearest foot)
** For Wind Turbines 500ft AGL or greater*

Requested Marking/Lighting: None

Other :

Recommended Marking/Lighting:

Current Marking/Lighting: N/A Proposed Structure

Other : ☐

Nearest City: Banning

Nearest State: California

Description of Location: THIS IS 36 of 36 TSP's.
54 of 54 TOTAL structures being filed in Banning. 18 are Lattice Steel Towers (LST), 36 are Tubular Steel Poles (TSP).
On the Project Summary page upload any certified survey.

Description of Proposal: Please refer to uploaded Map and Structure listing.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies

APPENDIX J-7 – ADDITIONAL MATERIALS PROVIDED FOR A COMPLETE RECORD OF PROCEEDINGS

WEST OF DEVERS UPGRADE

LETTER AGREEMENT

JUNE 12, 2013

SOUTHERN CALIFORNIA
EDISON
An EDISON INTERNATIONAL® Company

Kevin M. Payne
Vice President

June 12, 2013

Chairman Robert Martin
The Morongo Band of Mission Indians
12700 Pumarra Road
Banning, CA 92220

Re: Right-of-Way 4 Route Alternative Determination Date for Proposed West of Devers ("WOD") Upgrade Project

Dear Chairman Martin:

Per our recent discussions with your staff and consultants, this letter will supersede the letter on the same subject matter sent May 29, 2013. As stated in our letter agreements dated March 14, 2013 and May 10, 2013 ("the Letter Agreements"), Morongo and Southern California Edison ("SCE") representatives acknowledged that the parties needed to agree upon a date by which if one of the Right-of-Way 4 route alternatives is not feasible due to Federal Aviation Administration restrictions, SCE and Morongo will advocate to the California Public Utilities Commission that the other route should be selected as Right-of-Way 4 and the preferred route. A meeting between SCE and Morongo representatives, including Roger Meyer, Karen Woodard and George Forman, was held on May 23, 2013 to determine this date.

The final engineering and procurement of material for the WOD Upgrade Project will commence immediately following the CPUC's issuance of their Draft Environmental Impact Report (DEIR) for the project. Although SCE does not know exactly when the CPUC will issue the DEIR, October 14, 2014 is a reasonable forecast, given current scheduling projections and past-project experience. As such, the participants in the above-mentioned meeting all agreed that **October 14, 2014** or, if the CPUC has not issued its DEIR for the project by that date, the earlier of the date upon which the CPUC actually issues its DEIR or January 1, 2015, would be the date by which if Right-of-Way 4 route alternative Option 1 is not feasible due to FAA restrictions, Morongo and SCE will advocate to the CPUC that alternative Option 1X be chosen as Right-of-Way 4 and the preferred route.

Thank you for your attention to this very important issue. Please sign below to confirm your concurrence with the statements in this letter and return the executed letter to me at your earliest convenience. We look forward to continuing to work with you.

Best Regards,

K M Payne

cc: George Forman, Esq.
Karen Woodard
Roger Meyer

Acknowledged and Agreed:
MORONGO BAND OF MISSION INDIANS

By:____________________ Date: 6/21/13

Appendix 4. EMF Field Management Plan

Appendix 4

EMF Field Management Plan

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List of Terms

ACSR	Aluminum Conductor Steel Reinforced
CAISO	California Independent System Operator
CB	Circuit breaker
CDHS	California Department of Health Services
CPCN	Certificate of Public Convenience and Necessity
CPUC	California Public Utilities Commission
ELF	Extremely Low Frequency
EMF	Electric and Magnetic Fields
FMP	Field Management Plan
FRC	Fault Return Conductor
GO	General Order
IARC	International Agency for Research on Cancer
kV	kilovolt
LST	lattice steel tower
LWS	light weight steel
MEER	Mechanical Electrical Equipment Room
mG	milligauss
NIEHS	National Institute of Environmental Health Sciences
NRPB	National Radiation Protection Board
PEA	Proponents Environmental Assessment
PVC	Polyvinyl chloride
RAPID	Research and Public Information Dissemination
ROW	Right-of-way
SAC	Stranded Aluminum Conductor
SB-R-T	San Bernardino-Redlands-Timoteo
SB-R-TN	San Bernardino-Redlands-Tennessee
SCE	Southern California Edison
T/L	transmission line
TSP	tubular steel pole
WOD	West of Devers
WHO	World Health Organization

I. EXECUTIVE SUMMARY

This document is Southern California Edison Company's ("SCE") Field Management Plan ("FMP") for the proposed West of Devers ("WOD") Upgrade Project ("Proposed Project"). SCE proposes to construct the Proposed Project to increase the power transfer capability of the WOD 220 kV transmission lines ("T/Ls") between Devers, El Casco, Vista, and San Bernardino substations. The Proposed Project is needed to facilitate the full deliverability of new electric generation resources being developed in eastern Riverside County, in an area designated by the California Independent System Operator ("CAISO") for planning purposes as the Blythe and Desert Center areas.

The Proposed Project would upgrade the existing WOD T/L system by replacing the existing WOD 220 kV T/Ls and associated structures with new, higher-capacity T/Ls and structures; installing new and/or upgraded substation facilities; and making telecommunication improvements. In particular, the Proposed Project would:

- Upgrade substation equipment within SCE's existing Devers, El Casco, Etiwanda, San Bernardino, and Vista Substations in order to accommodate continuous and emergency power on the upgraded WOD 220 kV T/Ls. Upgrade SCE's existing Timoteo and Tennessee substations in order to accommodate the 66 kV subtransmission line relocations.

- Remove and upgrade the following existing 220 kV T/Ls and structures with new 220 kV T/Ls and structures utilizing double-bundled 1590 kcmil Aluminum Conductor Steel-Reinforced 2B-1590 ("ACSR") conductor:

    - Devers – El Casco (approximately 30 miles);
    - El Casco – San Bernardino (approximately 14 miles);
    - Devers – San Bernardino (approximately 43 miles);
    - Devers – Vista No. 1 and No. 2 (approximately 45 miles each);
    - Etiwanda – San Bernardino (approximately 3.5 miles); and
    - San Bernardino – Vista (approximately 3.5 miles).

- Remove and relocate approximately 2 miles of two existing 66 kV subtransmission lines.
- Remove and relocate approximately 4 miles of existing 12 kV distribution lines.
- Install telecommunication lines and equipment for the protection, monitoring, and control of T/Ls and substation equipment.

SCE provides this FMP in order to inform the public, the California Public Utilities Commission ("CPUC"), and other interested parties of its evaluation of "no-cost and low-cost" magnetic field reduction design options for this Project, and SCE's proposed plan to apply these design options to the Proposed Project. This FMP has been prepared in accordance with CPUC Decision No. 93-11-013 and Decision No. 06-01-042 relating to extremely low frequency

("ELF")[1] electric and magnetic fields ("EMF"). This FMP also provides background on the current status of scientific research related to possible health effects of EMF, and a description of the CPUC's EMF policy.

The "no-cost and low-cost" magnetic field reduction design options that are incorporated into the design of the Project are mainly as follows:

- Utilize subtransmission structure heights that meet or exceed SCE's EMF preferred design criteria
- Utilize underground subtransmission construction for crossing other transmission structures and other engineering reasons
- Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction
- Utilize taller structure heights **or** increased conductor ground clearance where the proposed T/Ls run adjacent to populated areas
- Arrange conductors of the proposed T/Ls for magnetic field reduction ("Phasing")

The "no-cost and low-cost" magnetic field reduction design options that SCE considered for the Proposed Project are summarized in Table 1.

SCE's plan for applying the above "no-cost and low-cost" magnetic field reduction design options for the Project is consistent with CPUC's EMF policy and with the direction of leading national and international health agencies. Furthermore, the plan complies with SCE's EMF Design Guidelines[2], and with applicable national and state safety standards for new electrical facilities.

---

[1] The extremely low frequency is defined as the frequency range from 3 Hz to 3,000 Hz.

[2] EMF Design Guidelines, July 2006.

Table 1. Summary of "No-cost and Low-cost" Magnetic Field Reduction Design Options

Area No.	Location[3]	Adjacent Land Use[4]	MF Reduction Design Options Considered	Estimated Cost to Adopt	Design Option(s) Adopted? (Yes/No)	Reason(s) if not adopted
Segment 1 – Model 1	From San Bernardino Substation to West Lugonia Avenue in City of Redlands	3	• Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction • Arrange conductors of T/Ls for magnetic field reduction • Utilize taller structure heights **or** increased conductor ground clearance where the proposed T/Ls run adjacent to populated areas	• No-Cost[5] • No-Cost • Low-Cost	• Yes • Yes • Yes	
Segment 1 – Model 2	From West Lugonia Avenue to Redlands Boulevard in City of Redlands and Loma Linda	3	• Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction • Arrange conductors of T/Ls for magnetic field reduction • Utilize taller structure heights **or** increased conductor ground clearance where the proposed T/Ls run adjacent to populated areas	• No-Cost • No-Cost • Low-Cost	• Yes • Yes • Yes	

---

[3] This column shows the major cross streets, existing transmission lines, or substation name(s) as reference points.

[4] Land usage codes are as follows: 1) schools, licensed day-cares, and hospitals, 2) residential, 3) commercial/industrial, 4) recreational, 5) agricultural, and 6) undeveloped land.

[5] This option was included in the preliminary design and continues to be included in the design of the Proposed Project.

Table 1. Summary of "No-cost and Low-cost" Magnetic Field Reduction Design Options (Cont.)

Area No.	Location	Adjacent Land Use	MF Reduction Design Options Considered	Estimated Cost to Adopt	Design Option(s) Adopted? (Yes/No)	Reason(s) if not adopted
Segment 1 – Model 3	From Redlands Boulevard to Barton Road in City of Loma Linda	2,3,5	• Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction • Arrange conductors of T/Ls for magnetic field reduction • Utilize taller structure heights or increased conductor ground clearance where the proposed T/Ls run adjacent to populated areas	• No-Cost[6] • No-Cost • Low-Cost	• Yes • Yes • Yes	
Segment 1 – Model 4	From Barton Road to the San Bernardino Junction in City of Loma Linda	2,3,5,6	• Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction • Arrange conductors of T/Ls for magnetic field reduction • Utilize taller structure heights or increased conductor ground clearance where the proposed T/Ls run adjacent to populated areas	• No-Cost • No-Cost • Low-Cost	• Yes • Yes • Yes	

---

[6] This option was included in the preliminary design and continues to be included in the design of the Proposed Project.

Table 1. Summary of “No-cost and Low-cost” Magnetic Field Reduction Design Options (Cont.)

Area No.	Location	Adjacent Land Use	MF Reduction Design Options Considered	Estimated Cost to Adopt	Design Option(s) Adopted? (Yes/No)	Reason(s) if not adopted
Segment 2 – Model 1	Near the west side of the intersection of Barton Road and East Hilltop Drive in Grand Terrace	1,2	• Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction • Arrange conductors of T/Ls for magnetic field reduction • Utilize taller structure heights **or** increased conductor ground clearance where the proposed T/Ls run adjacent to populated areas	• No-Cost[7] • No-Cost • Low-Cost	• Yes • Yes • Yes	
Segment 2 – Model 2	Near South Lauralwood Avenue & South Walter Court in Colton	2,6	• Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction • Arrange conductors of T/Ls for magnetic field reduction • Utilize taller structure heights **or** increased conductor ground clearance where the proposed T/Ls run adjacent to populated areas	• No-Cost • No-Cost • Low-Cost	• Yes • Yes • Yes	

---

[7] This option was included in the preliminary design and continues to be included in the design of the Proposed Project.

Table 1. Summary of "No-cost and Low-cost" Magnetic Field Reduction Design Options (Cont.)

Area No.	Location	Adjacent Land Use	MF Reduction Design Options Considered	Estimated Cost to Adopt	Design Option(s) Adopted? (Yes/No)	Reason(s) if not adopted
Segment 3	South of Helena Street inside the Fisherman's Retreat in the City of Redlands, approximately 1.3 mile north-west of El Casco Substation	2,4,6	• Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction • Arrange conductors of T/Ls for magnetic field reduction • Utilize taller structure heights **or** increased conductor ground clearance where the proposed T/Ls run adjacent to populated areas	• No-Cost[8] • No-Cost • Low-Cost	• Yes • Yes • Yes	
Segment 4 – Model 1	East of El Casco Substation, in existing SCE ROW north of the residential areas on the western limit of the City of Beaumont	2,6	• Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction • Arrange conductors of T/Ls for magnetic field reduction • Utilize taller structure heights **or** increased conductor ground clearance where the proposed T/Ls run adjacent to populated areas	• No-Cost • No-Cost • Low-Cost	• Yes • Yes • Yes	

---

[8] This option was included in the preliminary design and continues to be included in the design of the Proposed Project.

Table 1. Summary of "No-cost and Low-cost" Magnetic Field Reduction Design Options (Cont.)

Area No.	Location	Adjacent Land Use	MF Reduction Design Options Considered	Estimated Cost to Adopt	Design Option(s) Adopted? (Yes/No)	Reason(s) if not adopted
Segment 4 – Model 2	Cities of Beaumont, Calimesa, and Banning	1,2,3,4,6	• Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction • Arrange conductors of T/Ls for magnetic field reduction • Utilize taller structure heights **or** increased conductor ground clearance where the proposed T/Ls run adjacent to populated areas	• No-Cost[9] • No-Cost • Low-Cost	• Yes • Yes • Yes	
Segment 5 – Model 1	From North San Gorgonio to east side of Robertson's sand & gravel pit area in the City of Banning (lattice steel towers)	2,3,6	• Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction • Arrange conductors of T/Ls for magnetic field reduction • Utilize taller structure heights **or** increased conductor ground clearance where the proposed T/Ls run adjacent to populated areas	• No-Cost • No-Cost • Low-Cost	• Yes • Yes • Yes	

---

[9] This option was included in the preliminary design and continues to be included in the design of the Proposed Project.

Table 1. Summary of "No-cost and Low-cost" Magnetic Field Reduction Design Options (Cont.)

Area No.	Location	Adjacent Land Use	MF Reduction Design Options Considered	Estimated Cost to Adopt	Design Option(s) Adopted? (Yes/No)	Reason(s) if not adopted
Segment 5 – Model 2	From east side of the Robertson's sand & gravel pit area through the Morongo Reservation area to just east of the Malki Road and Seminole Drive intersection in the City of Cabazon (tubular steel poles)	6	• Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction • Arrange conductors of T/Ls for magnetic field reduction	• No-Cost[10] • No-Cost	• Yes • Yes	
Segment 5 – Model 3	From Malki Road and Seminole Drive to the eastern limit of the Morongo Reservation near Rushmore Avenue in the City of Cabazon (lattice steel towers)	2,3,6	• Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction • Arrange conductors of T/Ls for magnetic field reduction • Utilize taller structure heights **or** increased conductor ground clearance where the proposed T/Ls run adjacent to populated areas	• No-Cost • No-Cost • Low-Cost	• Yes • Yes • Yes	

---

[10] This option was included in the preliminary design and continues to be included in the design of the Proposed Project.

Table 1. Summary of "No-cost and Low-cost" Magnetic Field Reduction Design Options (Cont.)

Area No.	Location	Adjacent Land Use	MF Reduction Design Options Considered	Estimated Cost to Adopt	Design Option(s) Adopted? (Yes/No)	Reason(s) if not adopted
Segment 6 – Model 1	Near Rushmore Avenue in the community of Whitewater	2,6	• Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction • Arrange conductors of T/Ls for magnetic field reduction • Utilize taller structure heights **or** increased conductor ground clearance where the proposed T/Ls run adjacent to populated areas	• No-Cost[11] • No-Cost • Low-Cost	• Yes • Yes • Yes	
Segment 6 – Model 2	Near Amethyst Drive in the community of Whitewater	2,6	• Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction • Arrange conductors of T/Ls for magnetic field reduction • Utilize taller structure heights **or** increased conductor ground clearance where the proposed T/Ls run adjacent to populated areas	• No-Cost • No-Cost • Low-Cost	• Yes • Yes • Yes	

---

[11] This option was included in the preliminary design and continues to be included in the design of the Proposed Project.

Table 1. Summary of "No-cost and Low-cost" Magnetic Field Reduction Design Options (Cont.)

Area No.	Location	Adjacent Land Use	MF Reduction Design Options Considered	Estimated Cost to Adopt	Design Option(s) Adopted? (Yes/No)	Reason(s) if not adopted
Segment 6 – Model 3	Near Desert View Road & 16th Avenue in the community of North Palm Springs	2,6	• Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction • Arrange conductors of T/Ls for magnetic field reduction • Utilize taller structure heights **or** increased conductor ground clearance where the proposed T/Ls run adjacent to populated areas	• No-Cost[12] • No-Cost • Low-Cost	• Yes • Yes • Yes	
San Bernardino-Redlands-Timoteo 66 kV Relocation – Model 1	On San Bernardino Avenue between the San Bernardino Substation and Marigold Avenue in the City of San Bernardino	3	• Utilize subtransmission structure heights that meet or exceed SCE's preferred EMF design criteria • Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction, where applicable • Arrange conductors of subtransmission lines for magnetic field reduction	• No-Cost • No-Cost • No-Cost	• Yes • Yes • No	• Adjacent backup circuits normally have no currents

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[12] This option was included in the preliminary design and continues to be included in the design of the Proposed Project.

Table 1. Summary of "No-cost and Low-cost" Magnetic Field Reduction Design Options (Cont.)

Area No.	Location	Adjacent Land Use	MF Reduction Design Options Considered	Estimated Cost to Adopt	Design Option(s) Adopted? (Yes/No)	Reason(s) if not adopted
San Bernardino-Redlands-Timoteo 66 kV Relocation – Model 2	Overhead single circuit portion from the intersection of San Bernardino Avenue and Marigold Avenue in the City of San Bernardino to near the intersection of West Redlands Boulevard and Bryn Mawr Avenue in the City of Loma Linda	2,3,5	• Utilize subtransmission structure heights that meet or exceed SCE's preferred EMF design criteria • Utilize subtransmission line construction that reduces the space between conductors compared with other designs	• No-Cost[13] • No-Cost	• Yes • Yes	
San Bernardino-Redlands-Timoteo 66 kV Relocation – Model 3	Underground portion from near the intersection of West Redlands Boulevard and Bryn Mawr Avenue in the City of Loma Linda to Timoteo Substation on Mountain View Avenue	2,3	• Utilize underground subtransmission construction for crossing other transmission structures and other engineering reasons	• No-Cost	• Yes	
San Bernardino-Redlands-Tennessee 66 kV Relocation – Model 1	On San Bernardino Avenue between the San Bernardino Substation and Marigold Avenue in the City of Redlands	3	• Utilize subtransmission structure heights that meet or exceed SCE's preferred EMF design criteria • Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction • Arrange conductors of subtransmission lines for magnetic field reduction	• No-Cost • No-Cost • No-Cost	• Yes • Yes • Yes	

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[13] This option was included in the preliminary design and continues to be included in the design of the Proposed Project.

Table 1. Summary of "No-cost and Low-cost" Magnetic Field Reduction Design Options (Cont.)

Area No.	Location	Adjacent Land Use	MF Reduction Design Options Considered	Estimated Cost to Adopt	Design Option(s) Adopted? (Yes/No)	Reason(s) if not adopted
San Bernardino-Redlands-Tennessee 66 kV Relocation – Model 2	On San Bernardino Avenue between Marigold Avenue and Nevada Street in the City of Redlands	2,3,6	• Utilize subtransmission structure heights that meet or exceed SCE's preferred EMF design criteria • Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction, where applicable • Arrange conductors of subtransmission lines for magnetic field reduction	• No-Cost[14] • No-Cost • No-Cost	• Yes • Yes • No	• Adjacent backup circuits normally have no currents
San Bernardino-Redlands-Tennessee 66 kV Relocation – Model 3	Overhead single circuit portion between the intersection of San Bernardino Avenue and Nevada Street to the intersection of Barton Road and Iowa Street in the City of Redlands	1,2,3,6	• Utilize subtransmission structure heights that meet or exceed SCE's preferred EMF design criteria • Utilize subtransmission line construction that reduces the space between conductors compared with other designs • Locate subtransmission structures on west side of Nevada Street away from school • Using taller structures near the community day school	• No-Cost • No-Cost • No-Cost • Low-Cost	• Yes • Yes • Yes • No	• Not 15% or more reduction

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[14] This option was included in the preliminary design and continues to be included in the design of the Proposed Project.

II. BACKGROUND REGARDING EMF AND PUBLIC HEALTH RESEARCH ON EMF

There are many sources of power frequency[15] electric and magnetic fields, including internal household and building wiring, electrical appliances, and electric power transmission and distribution lines. There have been numerous scientific studies about the potential health effects of EMF. After many years of research, the scientific community has been unable to determine if exposures to EMF cause health hazards. State and federal public health regulatory agencies have determined that setting numeric exposure limits is not appropriate.[16]

Many of the questions about possible connections between EMF exposures and specific diseases have been successfully resolved due to an aggressive international research program. However, potentially important public health questions remain about whether there is a link between EMF exposures and certain diseases, including childhood leukemia and a variety of adult diseases (e.g., adult cancers and miscarriages). As a result, some health authorities have identified magnetic field exposures as a possible human carcinogen. As summarized in greater detail below, these conclusions are consistent with the following published reports: the National Institute of Environmental Health Sciences ("NIEHS") 1999[17], the National Radiation Protection Board ("NRPB") 2001[18], the International Commission on non-Ionizing Radiation Protection ("ICNIRP") 2001, the California Department of Health Services ("CDHS") 2002[19], the International Agency for Research on Cancer ("IARC") 2002[20] and the World Health Organization ("WHO") 2007[21] .

The federal government conducted EMF research as a part of a $45 million research program managed by the NIEHS. This program, known as the EMF RAPID (Research and Public Information Dissemination), submitted its final report to the U.S. Congress on June 15, 1999. The report concluded that:

- "The scientific evidence suggesting that ELF-EMF exposures pose any health risk is weak."[22]
- "The NIEHS concludes that ELF-EMF exposure cannot be recognized as entirely safe because of weak scientific evidence that exposure may pose a leukemia hazard."[23]

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[15] In U.S., it is 60 Hertz (Hz).

[16] CPUC Decision 06-01-042, p. 6, footnote 10.

[17] National Institute of Environmental Health Sciences' Report on Health Effects from Exposures to Power-Line frequency Electric and Magnetic Fields, NIH Publication No. 99-4493, June 1999.

[18] National Radiological Protection Board, Electromagnetic Fields and the Risk of Cancer, Report of an Advisory Group on Non-ionizing Radiation, Chilton, U.K. 2001.

[19] California Department of Health Services, An Evaluation of the Possible Risks from Electric and Magnetic Fields from Power Lines, Internal Wiring, Electrical Occupations, and Appliances, June 2002.

[20] World Health Organization / International Agency for Research on Cancer, IARC Monographs on the evaluation of carcinogenic risks to humans (2002), Non-ionizing radiation, Part 1: Static and extremely low-frequency (ELF) electric and magnetic fields, IARCPress, Lyon, France: International Agency for Research on Cancer, Monograph, vol. 80, p. 338, 2002.

[21] WHO, Environmental Health Criteria 238, EXTREMELY LOW FREQUENCY FIELDS, 2007.

[22] National Institute of Environmental Health Sciences, NIEHS Report on Health Effects from Exposures to Power-Frequency Electric and Magnetic Fields, p. ii, NIH Publication No. 99-4493, 1999.

- "The NIEHS suggests that the level and strength of evidence supporting ELF-EMF exposure as a human health hazard are insufficient to warrant aggressive regulatory actions; thus, we do not recommend actions such as stringent standards on electric appliances and a national program to bury all transmission and distribution lines. Instead, the evidence suggests passive measures such as a continued emphasis on educating both the public and the regulated community on means aimed at reducing exposures. NIEHS suggests that the power industry continue its current practice of siting power lines to reduce exposures and continue to explore ways to reduce the creation of magnetic fields around transmission and distribution lines without creating new hazards."[24]

In 2001, Britain's NRPB arrived at a similar conclusion:

> "After a wide-ranging and thorough review of scientific research, an independent Advisory Group to the Board of NRPB has concluded that the power frequency electromagnetic fields that exist in the vast majority of homes are not a cause of cancer in general. However, some epidemiological studies do indicate a possible small risk of childhood leukemia associated with exposures to unusually high levels of power frequency magnetic fields."[25]

In 2002, three scientists for CDHS concluded:

> "To one degree or another, all three of the [CDHS] scientists are inclined to believe that EMFs can cause some degree of increased risk of childhood leukemia, adult brain cancer, Lou Gehrig's disease, and miscarriage.
>
> They [CDHS] strongly believe that EMFs do not increase the risk of birth defects, or low birth weight.
>
> They [CDHS] strongly believe that EMFs are not universal carcinogens, since there are a number of cancer types that are not associated with EMF exposure.
>
> To one degree or another they [CDHS] are inclined to believe that EMFs do not cause an increased risk of breast cancer, heart disease, Alzheimer's disease, depression, or symptoms attributed by some to a sensitivity to EMFs. However, all three scientists had judgments that were "close to the dividing line between believing and not believing" that EMFs cause some degree of increased risk of suicide. For adult leukemia, two of the scientists are 'close to the dividing line

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[23] *Ibid.*, p. iii.

[24] *Ibid.*, p. 37 – 38.

[25] NRPB, NRPB Advisory Group on Non-ionizing Radiation Power Frequency Electromagnetic Fields and the Risk of Cancer, NRPB Press Release March 2001.

> between believing or not believing' and one was 'prone to believe' that EMFs cause some degree of increased risk."[26]

Also in 2002, the World Health Organization's ("WHO") IARC concluded:

> "ELF magnetic fields are possibly carcinogenic to humans"[27], based on consistent statistical associations of high-level residential magnetic fields with a doubling of risk of childhood leukemia...Children who are exposed to residential ELF magnetic fields less than 0.4 microTesla (4.0 milliGauss "mG") have no increased risk for leukemia.... In contrast, "no consistent relationship has been seen in studies of childhood brain tumors or cancers at other sites and residential ELF electric and magnetic fields."[28]

In June of 2007, the WHO issued a report on their multi-year investigation of EMF and the possible health effects. After reviewing scientific data from numerous EMF and human health studies, they concluded:

> "Scientific evidence suggesting that everyday, chronic low-intensity (above 0.3-0.4 μT [3-4 mG]) power-frequency magnetic field exposure poses a health risk is based on epidemiological studies demonstrating a consistent pattern of increased risk for childhood leukaemia."[29]
>
> "In addition, virtually all of the laboratory evidence and the mechanistic evidence fail to support a relationship between low-level ELF magnetic fields and changes in biological function or disease status. Thus, on balance, the evidence is not strong enough to be considered causal, but sufficiently strong to remain a concern."[30]
>
> "A number of other diseases have been investigated for possible association with ELF magnetic field exposure. These include cancers in both children and adults, depression, suicide, reproductive dysfunction, developmental disorders, immunological modifications and neurological disease. The scientific evidence supporting a linkage between ELF magnetic fields and any of these diseases is much weaker than for childhood leukemia and in some cases (for example, for cardiovascular disease or breast cancer) the evidence is sufficient to give confidence that magnetic fields do not cause the disease"[31]
>
> "Furthermore, given both the weakness of the evidence for a link between exposure to ELF magnetic fields and childhood leukemia, and the limited impact

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[26] CDHS, An Evaluation of the Possible Risks From Electric and Magnetic Fields (EMFs) From Power Lines, Internal Wiring, Electrical Occupations and Appliances, p. 3, 2002.

[27] IARC, Monographs, Part I, Vol. 80, p. 338.

[28] *Ibid.*, p. 332 – 334.

[29] WHO, Environmental Health Criteria 238, EXTREMELY LOW FREQUENCY FIELDS, p. 11 - 13, 2007.

[30] *Ibid.*, p. 12.

[31] *Ibid.*, p. 12.

on public health if there is a link, the benefits of exposure reduction on health are unclear. Thus the costs of precautionary measures should be very low."[32]

III. APPLICATION OF THE CPUC'S "NO-COST AND LOW-COST" EMF POLICY TO THIS PROJECT

Recognizing the scientific uncertainty over the connection between EMF exposures and health effects, the CPUC adopted a policy that addresses public concern over EMF with a combination of education, information, and precaution-based approaches. Specifically, Decision 93-11-013 established a precautionary based "no-cost and low-cost" EMF policy for California's regulated electric utilities based on recognition that scientific research had not demonstrated that exposures to EMF cause health hazards and that it was inappropriate to set numeric standards that would limit exposure.

In 2006, the CPUC completed its review and update of its EMF Policy in Decision 06-01-042. This decision reaffirmed the finding that state and federal public health regulatory agencies have not established a direct link between exposure to EMF and human health effects,[33] and the policy direction that (1) use of numeric exposure limits was not appropriate in setting utility design guidelines to address EMF,[34] and (2) existing "no-cost and low-cost" precautionary-based EMF policy should be continued for proposed electrical facilities. The decision also reaffirmed that EMF concerns brought up during Certificate of Public Convenience and Necessity ("CPCN") and Permit to Construct ("PTC") proceedings for electric and transmission and substation facilities should be limited to the utility's compliance with the CPUC's "no-cost and low-cost" policies.[35]

The decision directed regulated utilities to hold a workshop to develop standard approaches for EMF Design Guidelines and such a workshop was held on February 21, 2006. Consistent design guidelines have been developed that describe the routine magnetic field reduction measures that regulated California electric utilities consider for new and upgraded transmission line and transmission substation projects. SCE filed its revised EMF Design Guidelines with the CPUC on July 26, 2006.

"No-cost and low-cost" measures to reduce magnetic fields would be implemented for this Project in accordance with SCE's EMF Design Guidelines. In summary, the process of evaluating "no-cost and low-cost" magnetic field reduction measures and prioritizing within and between land usage classes considers the following:

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[32] *Ibid.*, p. 13.

[33] CPUC Decision 06-01-042, Findings of Fact No. 5, mimeo. p. 19 ("As discussed in the rulemaking, a direct link between exposure to EMF and human health effects has yet to be proven despite numerous studies including a study ordered by this Commission and conducted by DHS.").

[34] CPUC Decision 06-01-042, mimeo. p. 17 - 18 ("Furthermore, we do not request that utilities include non-routine mitigation measures, or other mitigation measures that are based on numeric values of EMF exposure, in revised design guidelines or apply mitigation measures to reconfigurations or relocations of less than 2,000 feet, the distance under which exemptions apply under GO 131-D. Non-routine mitigation measures should only be considered under unique circumstances.").

[35] CPUC Decision 06-01-042, Conclusion of Law No. 2, mimeo.p. 21, ("EMF concerns in future CPCN and PTC proceedings for electric and transmission and substation facilities should be limited to the utility's compliance with the Commission's low-cost/no-cost policies.").

1. SCE's priority in the design of any electrical facility is public and employee safety. Without exception, design and construction of an electric power system must comply with all applicable federal, state, and local regulations, applicable safety codes, and each electric utility's construction standards. Furthermore, transmission and subtransmission lines and substations must be constructed so that they can operate reliably at their design capacity. Their design must be compatible with other facilities in the area and the cost to operate and maintain the facilities must be reasonable.

2. As a supplement to Step 1, SCE follows the CPUC's direction to undertake "no-cost and low-cost" magnetic field reduction measures for new and upgraded electrical facilities. Any proposed "no-cost and low-cost" magnetic field measures, must, however, meet the requirements described in Step 1 above. The CPUC defines "no-cost and low-cost" measures as follows:

   - Low-cost measures, in aggregate, should:
     - Cost in the range of 4 percent of the total project cost.
     - Result in magnetic field reductions of "15% or greater at the utility R-O-W [right-of-way]…"[36]

   The CPUC Decision stated,

   > "We direct the utilities to use 4 percent as a benchmark in developing their EMF mitigation guidelines. We will not establish 4 percent as an absolute cap at this time because we do not want to arbitrarily eliminate a potential measure that might be available but costs more than the 4 percent figure. Conversely, the utilities are encouraged to use effective measures that cost less than 4 percent."[37]

3. The CPUC provided further policy direction in Decision 06-01-042, stating that, "[a]lthough equal mitigation for an entire class is a desirable goal, we will not limit the spending of EMF mitigation to zero on the basis that not all class members can benefit."[38] While Decision 06-01-042 directs the utilities to favor schools, day-care facilities and hospitals over residential areas when applying low-cost magnetic field reduction measures, prioritization within a class can be difficult on a project case-by-case basis because schools, day-care facilities, and hospitals are often integrated into residential areas, and many licensed day-care facilities are housed in private homes, and can be easily moved from one location to another. Therefore, it may be practical for public schools, licensed day-care centers, hospitals, and residential land uses to be grouped together to receive

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[36] CPUC Decision 06-01-042, p. 10.

[37] CPUC Decision 93-11-013, § 3.3.2, p.10.

[38] CPUC Decision 06-01-042, p. 10.

> highest prioritization for low-cost magnetic field reduction measures. Commercial and industrial areas may be grouped as a second priority group, followed by recreational and agricultural areas as the third group. Low-cost magnetic field reduction measures will not be considered for undeveloped land, such as open space, state and national parks, and Bureau of Land Management and U.S. Forest Service lands. When spending for low-cost measures would otherwise disallow equitable magnetic field reduction for all areas within a single land-use class, prioritization can be achieved by considering location and/or density of permanently occupied structures on lands adjacent to the projects, as appropriate.

This FMP contains descriptions of various magnetic field models and the calculated results of magnetic field levels based on those models. These calculated results are provided only for purposes of identifying the relative differences in magnetic field levels among various transmission or subtransmission line design alternatives under a specific set of modeling assumptions and determining whether particular design alternatives can achieve magnetic field level reductions of 15 percent or more. The calculated results are not intended to be predictors of the actual magnetic field levels at any given time or at any specific location if and when the Project is constructed. This is because magnetic field levels depend upon a variety of variables, including load growth, customer electricity usage, and other factors beyond SCE's control. The CPUC affirmed this in D. 06-01-042 stating:

> "Our [CPUC] review of the modeling methodology provided in the utility [EMF] design guidelines indicates that it accomplishes its purpose, which is to measure the relative differences between alternative mitigation measures. Thus, the modeling indicates relative differences in magnetic field reductions between different transmission line construction methods, but does not measure actual environmental magnetic fields."[39]

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[39] CPUC Decision 06-01-042, p. 11.

IV. PROJECT DESCRIPTION

This document is Southern California Edison Company's ("SCE") Field Management Plan ("FMP") for the proposed West of Devers ("WOD") Upgrade Project ("Proposed Project"). SCE proposes to construct the Proposed Project to increase the power transfer capability of the WOD 220 kilovolt ("kV") transmission lines ("T/Ls") between Devers, El Casco, Vista, and San Bernardino substations (see Figure 1, West of Devers Project Area). The Proposed Project is needed to facilitate the full deliverability of new electric generation resources being developed in eastern Riverside County, in an area designated by the California Independent System Operator ("CAISO") for planning purposes as the Blythe and Desert Center areas.

For the purpose of EMF analysis, this FMP focuses only on major electrical components of the Proposed Project. Substation apparatus upgrade, distribution system modification, telecommunication, and construction details are not in the scope of this FMP.

This section provides a description of the Proposed Project. The Proposed Project would be located primarily within the existing WOD corridor in the incorporated and unincorporated areas of Riverside and San Bernardino Counties including the Reservation Trust Lands of the Morongo Band of Mission Indians ("Morongo Reservation"), and the Cities of Banning, Beaumont, Calimesa, Colton, Grand Terrace, Loma Linda, and Redlands (refer to Figure 1, West of Devers Project Area). The existing WOD corridor traverses a combination of residential, commercial, agricultural, recreation, and open space land uses.

Transmission Lines

The Proposed Project would upgrade the existing WOD system by replacing existing 220 kV T/Ls and associated structures with new, higher-capacity 220 kV T/Ls and structures; modifying existing substation facilities; removing and relocating existing subtransmission (66 kV) lines; removing and relocating existing distribution (12 kV) lines; and making various telecommunication improvements. In particular, the Proposed Project would:

- Remove and upgrade the existing 220 kV T/Ls and structures primarily within the existing WOD corridor as follows:[40]
    - Segment 1 would be approximately 3.5 miles in length and extend south from San Bernardino Substation to the San Bernardino Junction and include the following existing 220 kV T/Ls: Devers-San Bernardino, Etiwanda-San Bernardino, San Bernardino-Vista, and El Casco-San Bernardino.
    - Segment 2 would be approximately 5 miles in length and extend west from the San Bernardino Junction to Vista Substation and include the following existing 220 kV T/Ls: Devers-Vista No. 1 and Devers-Vista No. 2.

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[40] The proposed transmission line elements have been divided into six segments for ease of description in this FMP.

- Segment 3 would be approximately 10 miles in length and extend east from the San Bernardino Junction to El Casco Substation and include the following existing 220 kV T/Ls: Devers-Vista No. 1, Devers-Vista No. 2, El Casco-San Bernardino, and Devers-San Bernardino.
- Segment 4 would be approximately 12 miles in length and extend east from the El Casco Substation to San Gorgonio Avenue in the City of Banning and include the following existing 220 kV T/Ls: Devers-Vista No. 1, Devers-Vista No. 2, Devers-El Casco, and Devers-San Bernardino.
- Segment 5 would be approximately 9 miles in length and extend east from San Gorgonio Avenue in the City of Banning to the eastern limit of the Morongo Reservation[41] at Rushmore Avenue and include the following existing 220 kV T/Ls: Devers-Vista No. 1, Devers-Vista No. 2, Devers-El Casco, and Devers-San Bernardino.
- Segment 6 would be approximately 8 miles in length and extend east from the eastern limit of the Morongo Reservation to Devers Substation and include the following existing 220 kV T/Ls: Devers-Vista No. 1, Devers-Vista No. 2, Devers-El Casco, and Devers-San Bernardino.

The project description is based on planning level assumptions. Exact details would be determined following completion of final engineering, identification of field conditions, availability of labor, material, and equipment, and compliance with applicable environmental and permitting requirements.

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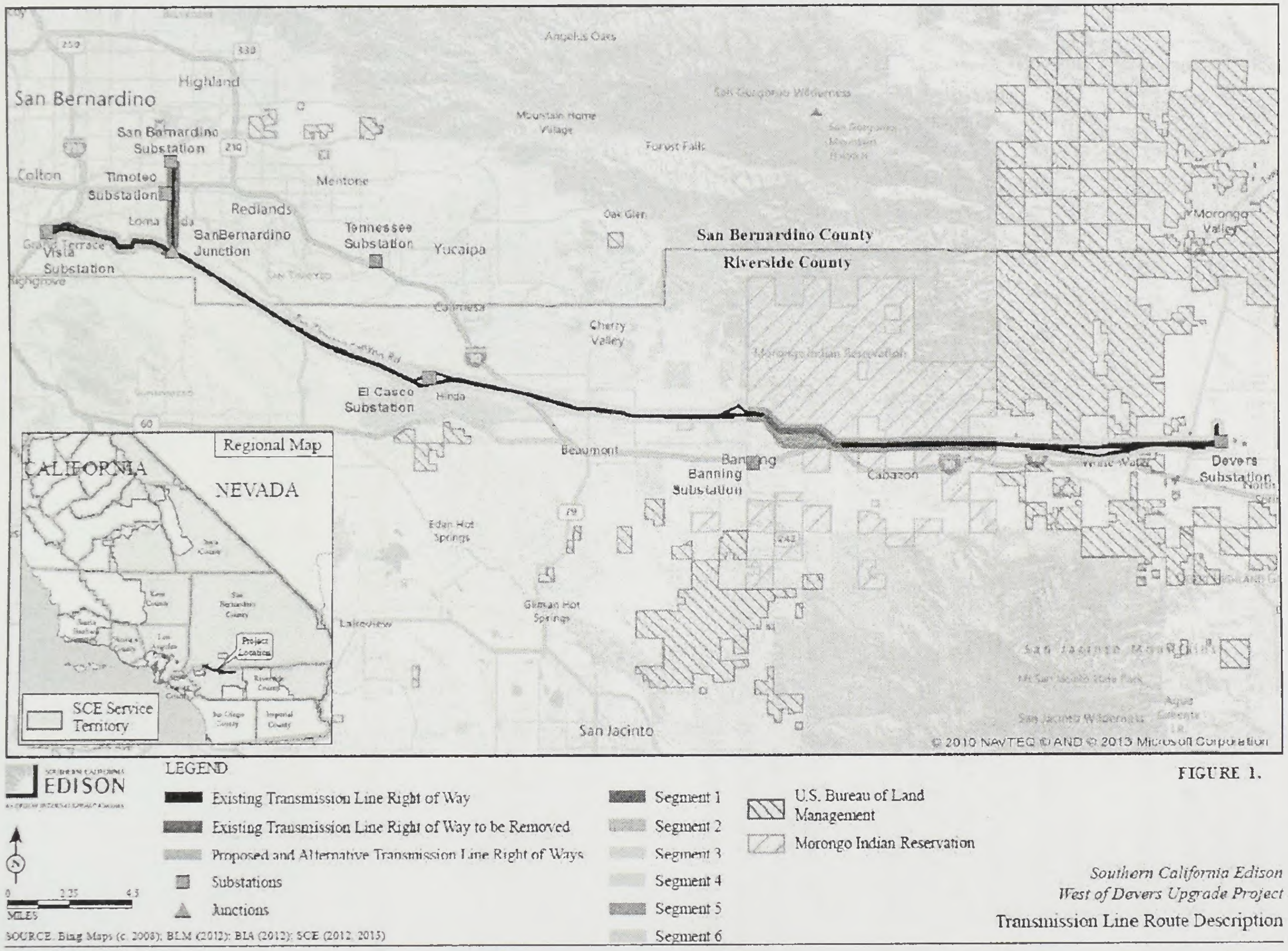
[41] Approximately 3 miles of existing ROW would be abandoned and replaced with a new 3-mile alignment pursuant to the SCE-Morongo ROW agreement. In addition, this segment consists of an alternative to a new 3-mile alignment (220 kV Transmission Line Route Alternative 1), which is further explained in the Proponents Environmental Assessment (PEA) Section 3.14 Project Alternatives.

Figure 1. West of Devers Upgrade Project Area



SOURCE: Bing Maps (c. 2008); BLM (2012); BIA (2012); SCE (2012, 2015)

Substations

There are no new substations proposed as part of the Proposed Project. Modifications to existing substation equipment would be performed to accommodate continuous and emergency power on the WOD 220 kV T/Ls between Vista, San Bernardino, El Casco, Etiwanda, and Devers substations.

Additionally, modifications to Timoteo and Tennessee substations would also be performed to accommodate the 66 kV subtransmission line relocations.

Modifications to Existing Substations Description

Work at Vista, San Bernardino, El Casco, and Devers substations would occur on the Proposed Project-related 220 kV facilities and would include replacement of disconnect switches, circuit breakers, foundations, and reconductoring line positions. Work at Etiwanda Substation would occur within the existing Mechanical and Electrical Equipment Room ("MEER") and include installation of new protection relay equipment. Work at Tennessee and Timoteo Substations would include replacement of 66 kV circuit breakers and foundations.

All substation-related work would be conducted within the existing substation walls or fence lines. Based on the limited substation project scope, there are no opportunities to reduce EMF for the substation work. Therefore this FMP does not further analyze the substation work of the Proposed Project.

66 kV Subtransmission Lines

The Proposed Project would require relocation of portions of the existing San Bernardino-Redlands-Timoteo and the San Bernardino-Redlands-Tennessee 66 kV subtransmission lines located within Segment 1 to new routes within existing ROW or franchise, or newly acquired ROW.[42] These two existing 66 kV subtransmission lines are currently located on approximately nine double-circuit lattice steel towers ("LSTs") and 28 double-circuit wood poles that would be removed from the existing Segment 1 ROW.

San Bernardino-Redlands-Timoteo 66 kV Subtransmission Line Route

A portion of the existing San Bernardino-Redlands-Timoteo 66 kV Subtransmission Line would be removed and relocated outside of the existing WOD corridor.

The relocated single-circuit San Bernardino-Redlands-Timoteo 66 kV Subtransmission Line would connect to the existing San Bernardino Substation. The relocated 66 kV subtransmission line would exit San Bernardino Substation on existing poles and then transition underground to the east for approximately 800 feet within a new duct bank requiring the installation of two new vaults. The relocated 66 kV subtransmission line would then rise to an overhead position via a tubular steel pole ("TSP") riser pole that would be located along West San Bernardino Avenue. From the TSP riser pole, the 66 kV subtransmission line would transition to the south side of San Bernardino Avenue and extend approximately 1,350 feet along San Bernardino Avenue in a double-circuit configuration with the existing Calectric-Homart-Mentone 115 kV line. This portion of the line would extend to the corner of Marigold Avenue and would include the installation of approximately three TSPs, nine LWS/wood poles, and the removal of six wood poles. The 66 kV subtransmission line would then extend south for approximately 1,350 feet along a private property line to Almond Avenue and would include the installation of approximately one TSP and eight LWS/wood poles. The 66 kV subtransmission line would then extend west on Almond Avenue for approximately 600 feet. This portion of the subtransmission line would include the installation of approximately one TSP and four new LWS/wood poles. The 66 kV subtransmission line would extend south for 1,250 feet along an existing property line to Lugonia Avenue. This portion of the subtransmission line would include the installation of approximately one TSP and seven new LWS/wood poles. From this location, the 66 kV subtransmission line would proceed south overbuilt with existing distribution for about 1,200 feet to Interstate 10. This portion of the subtransmission line would include the installation of approximately one TSP and seven new LWS/wood poles. In order to accommodate the crossing of Interstate 10, the new 66 kV subtransmission line would require the installation of two new TSPs. From the south side of Interstate 10, the subtransmission line would extend south along Bryn Mawr Avenue for approximately 1,200 feet on approximately five new LWS/wood poles and would then transition from overhead to underground via a TSP riser pole. The 66 kV subtransmission line would be located underground for approximately 3,200 feet from the TSP riser pole, south along a portion of Bryn Mawr Avenue (includes installation of one vault), and east along Redlands Boulevard (includes installation of one vault). Then it reaches an alley where it would proceed south (includes installation of one vault) and then west along the alley (includes installation of one vault) until it reaches Mountain View Avenue, where it would then rise to an overhead position via a TSP riser and extend overhead south for 160 feet to connect to the existing Timoteo Substation. This portion of the subtransmission line would include three LWS/wood poles.

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[42] The relocated subtransmission facilities would be outside of the existing 220 kV ROW but generally within the vicinity of the geographic area defined as Segment 1.

In summary, the relocated single-circuit San Bernardino-Redlands-Timoteo 66 kV Subtransmission Line would be approximately 2 miles in length, constructed within new ROW or existing franchise[43] and would include the following components:

- Installation of approximately 51 subtransmission LWS or wood poles, with associated guying, and approximately 11 TSPs;
- Installation of approximately 4,000 circuit feet of 3,000 kcmil underground conductor, approximately seven vaults (10 feet × 20 feet × 11feet) and approximately 4,000 feet of new duct bank;
- Installation of approximately 7,100 circuit feet of 954 Stranded Aluminum Conductor ("SAC") overhead conductor ; and
- Removal of six wood poles.

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[43] Franchise is a right or privilege conferred by agreement between SCE and local jurisdictions.

San Bernardino-Redlands-Tennessee 66 kV Subtransmission Line Route

A portion of the San Bernardino-Redlands-Tennessee 66 kV Subtransmission Line would be removed and relocated outside of the existing WOD corridor.

The relocated single-circuit San Bernardino-Redlands-Tennessee 66 kV Subtransmission Line would connect to the existing San Bernardino Substation. The relocated 66 kV subtransmission line would exit San Bernardino Substation on existing poles and then transition underground to the east for approximately 800 feet in a new duct bank requiring the installation of two new vaults. The relocated 66 kV subtransmission line would then rise to an overhead position via a TSP riser pole that would be located along West San Bernardino Avenue. From the TSP riser pole, the 66 kV subtransmission line would extend approximately 1,350 feet along San Bernardino Avenue to the corner of Marigold Avenue and would include the installation of approximately one TSP and nine LWS/wood poles. The 66 kV subtransmission line would then continue east along the south side of West San Bernardino Avenue in a double circuit configuration with the Calectric-Homart-Mentone 115 kV line for approximately 4,700 feet on approximately 26 LWS/wood poles and two TSPs to Nevada Street. The 66 kV subtransmission line would then extend south on Nevada Avenue for approximately 3,800 feet on approximately 21 LWS/wood poles and four TSPs to Interstate 10. In order to accommodate the crossing of Interstate 10, the new 66 kV subtransmission line would require the installation of 3 new TSPs. From the south side of Interstate 10, the subtransmission line would extend south along Nevada Street for approximately 4,000 feet on approximately 20 LWS/wood poles and 2 TSPs to Citrus Avenue. The 66 kV subtransmission line would then extend east on Citrus Avenue for approximately 1,300 feet on approximately 11 LWS/wood poles and 1 TSP to Iowa Avenue. From Iowa Avenue, the 66 kV subtransmission line would extend south along Iowa Avenue for 2,700 feet on approximately 16 LWS/wood poles and 1 TSP where it would connect to the existing San Bernardino-Redlands-Tennessee 66 kV Subtransmission Line.

In summary, the relocated single-circuit San Bernardino-Redlands-Tennessee 66 kV Subtransmission Line would be approximately 3.5 miles in length, constructed within new ROW or existing franchise and would include the following components:

- Installation of approximately 103 subtransmission LWS or wood poles, with associated guying, and approximately 15 TSPs;
- Installation of approximately 800 circuit feet of 3,000 kcmil underground conductor, approximately two vaults (10 feet × 20 feet × 11 feet) and approximately 800 feet of new duct bank;
- Installation of approximately 18,480 of circuit feet 954 SAC overhead conductor ; and
- Removal of 19 wood poles.

Additional minor subtransmission relocations and associated work may be required after the completion of final engineering of the 220 kV upgrades. The exact locations and extent of such work is not known at this time.

66 kV Subtransmission Underground

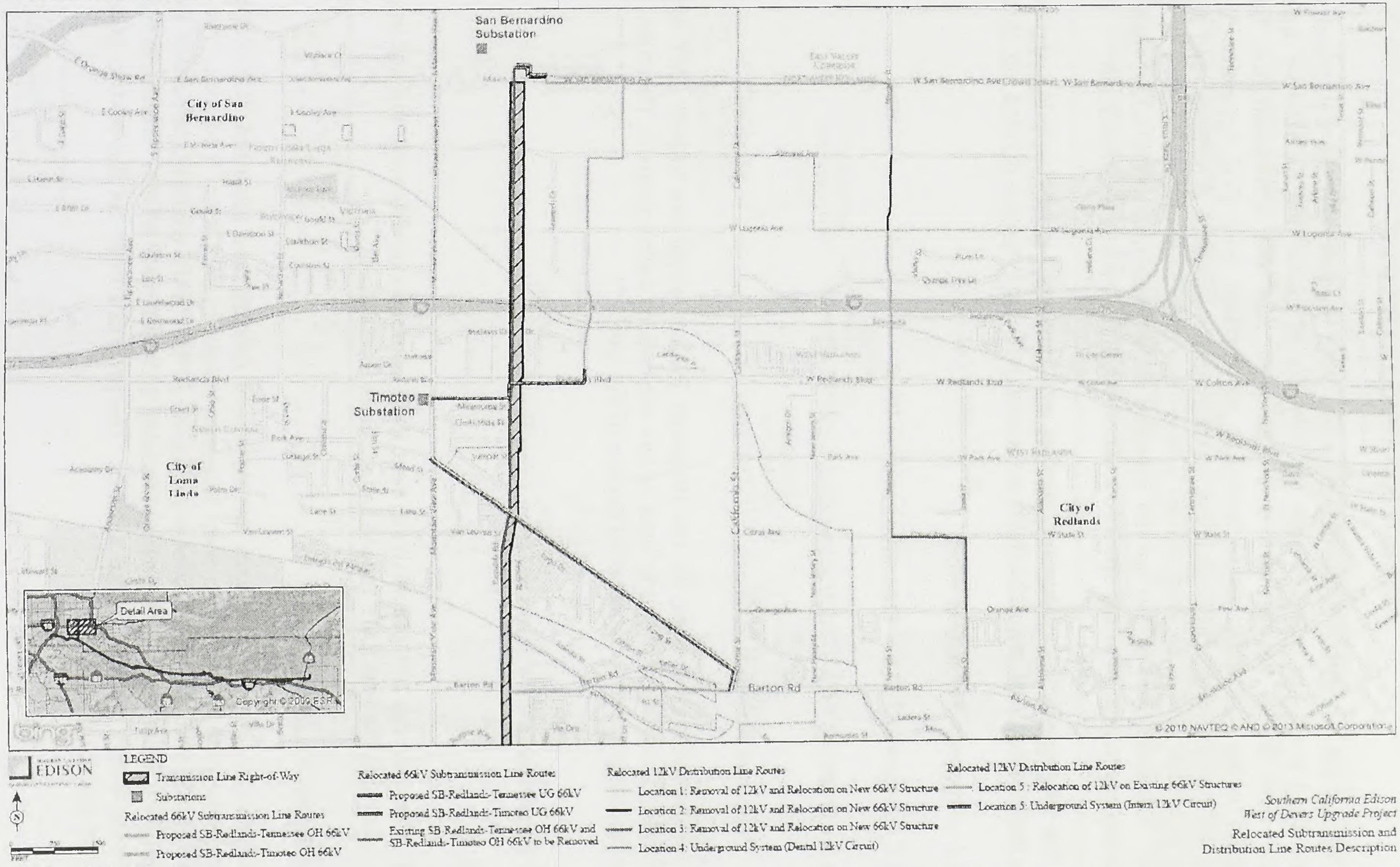
Underground 66 kV subtransmission facilities would be installed from San Bernardino Substation for approximately 800 feet along West San Bernardino Avenue to accommodate both the San Bernardino-Redlands-Timoteo 66 kV Subtransmission Line relocation and the San Bernardino-Redlands-Tennessee 66 kV Subtransmission Line relocation. The underground 66 kV subtransmission facilities portion of the San Bernardino-Redlands-Timoteo 66 kV Subtransmission Line route near Timoteo Substation would be approximately 3,100 feet from Bryn Mawr Avenue to Mountain View Avenue. The final determination on the number of required underground subtransmission vaults would be determined during final engineering; however, nine vaults have been estimated for purposes of the project description.

Trenches approximately 20–24 inches wide by a minimum of 63 inches deep would be required for installation of underground facilities. Following completion of trench excavation, duct banks would be installed in the trench, including conduit, spacers, ground wire, and concrete encasement. The duct bank typically consists of six 5-inch diameter polyvinyl chloride ("PVC") conduits fully encased with a minimum of 3 inches of concrete all around. Typical subtransmission (66 kV) duct bank installations would accommodate six cables. The Proposed Project would utilize all six conduits for the first 800 feet (at San Bernardino Substation) and, for the remaining 2,300 feet, only three conduits would be utilized (near Timoteo Substation), leaving three spare conduits for any potential future circuit. The subtransmission duct banks would typically be installed in a vertically stacked configuration and each duct bank would be approximately 21 inches high by 20 inches wide.

Vaults are below-grade concrete enclosures that would be installed where the duct banks terminate. The inside dimensions of the underground vaults would be approximately 10 feet wide by 20 feet long with an inside height of 9.5 feet. The vaults would be placed no more than 1,500 feet apart along the proposed underground route. TSP riser poles would be located at the ends of each underground segment, at which the cables would transition from the underground duct bank to the overhead pole. The transition structure would support cable terminations, lightning arresters, and dead-end hardware for overhead conductors.

Figure 2 depicts the overview of the subtransmission relocation routes.

Figure 2. West of Devers Upgrade Project Subtransmission Relocation


San Bernardino Substation
Timoteo Substation
City of San Bernardino
City of Loma Linda
City of Redlands
Barton Rd
Detail Area
Copyright © 2009 ESRI
© 2010 NAVTEQ © AND © 2013 Microsoft Corporation
EDISON
N
0 750 1500
FEET
LEGEND
Transmission Line Right-of-Way
Substations
Relocated 66kV Subtransmission Line Routes
Proposed SB-Redlands-Tennessee OH 66kV
Proposed SB-Redlands-Timoteo OH 66kV
Relocated 66kV Subtransmission Line Routes
Proposed SB-Redlands-Tennessee UG 66kV
Proposed SB-Redlands-Timoteo UG 66kV
Existing SB-Redlands-Tennessee OH 66kV and SB-Redlands-Timoteo OH 66kV to be Removed
Relocated 12kV Distribution Line Routes
Location 1: Removal of 12kV and Relocation on New 66kV Structure
Location 2: Removal of 12kV and Relocation on New 66kV Structure
Location 3: Removal of 12kV and Relocation on New 66kV Structure
Location 4: Underground System (Dental 12kV Circuit)
Relocated 12kV Distribution Line Routes
Location 5 : Relocation of 12kV on Existing 66kV Structures
Location 5: Underground System (Intern 12kV Circuit)
Southern California Edison
West of Devers Upgrade Project
Relocated Subtransmission and Distribution Line Routes Description

SOURCE: Bing Maps (c 2010); SCE (3/2012, 2/2013)

V. EVALUATION OF "NO-COST AND LOW-COST" MAGNETIC FIELD REDUCTION DESIGN OPTIONS

Please note that the following magnetic field models and the calculated results of magnetic field levels are intended only for purposes of identifying the relative differences in magnetic field levels among various transmission line and subtransmission line design alternatives under a specific set of modeling assumptions (see §VII-Appendix A for more detailed information about the calculation assumptions and loading conditions) and determining whether particular design alternatives can achieve magnetic field level reductions of 15 percent or more. The calculated results are not intended to be predictors of the actual magnetic field levels at any given time or at any specific location when the Project is constructed.

For the purpose of evaluating "no-cost and low-cost" magnetic field reduction design options, the evaluation of magnetic fields associated with the Project is divided into three parts:

- Part 1 - Proposed Substation Work
- Part 2 - Proposed 220 kV Transmission Line Work
- Part 3 - Proposed 66 kV Subtransmission Line Work

Part 1 - Proposed Substation Work

All the substation work for the Proposed Project would not impact EMF exposure to areas outside of substation property lines of any substations in this project. Therefore, this FMP does not further evaluate the substation portion of the work.

Part 2 - Proposed 220 kV Transmission Line Work

Segment 1

For the purpose of EMF analysis, four EMF computer models were utilized in populated areas to determine the best EMF reduction measures for Segment 1.

Segment 1 – Model 1

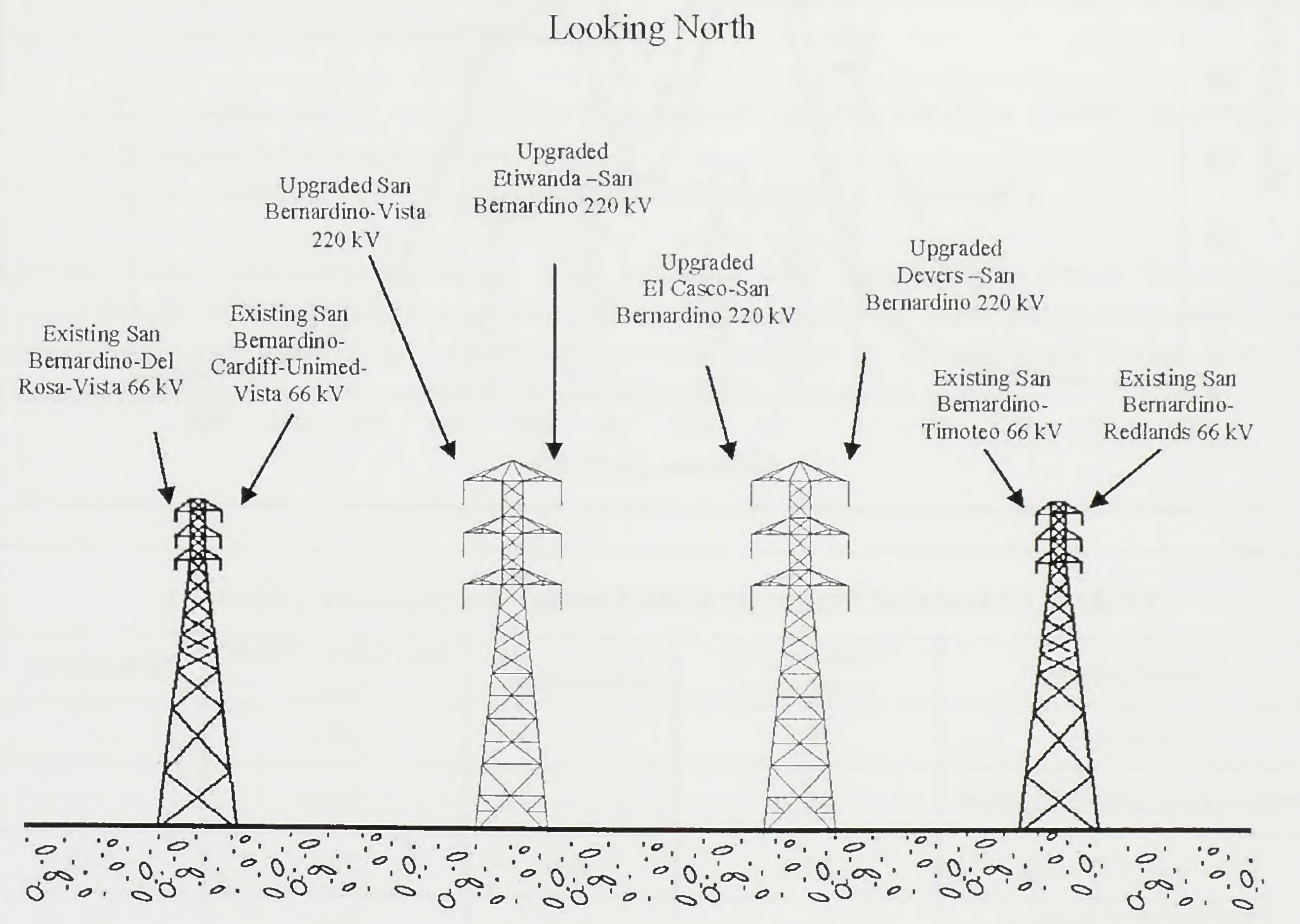
Segment 1 Model 1 analyzes the section of existing and proposed SCE ROW designs from San Bernardino Substation to West Lugonia Avenue in the City of Redlands. The proposed typical design for this section is shown in Figure 3. For EMF analysis, calculated field levels were evaluated at the edges of the approximately 245-foot wide ROW. Presently, there are no schools immediately adjacent to this section. The proposed route for this section is adjacent to commercial/industrial area.

No-Cost Field Reduction Measures: The proposed design for this section includes the following no-cost field reduction measures:

1. Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction
2. Arrange conductors of T/Ls for magnetic field reduction ("Phasing")

Low-Cost Field Reduction Options: The initial no-cost analysis was based on minimum structure heights of 110 feet above ground. The low-cost option of using a minimum of 125 feet structure heights or raising the conductor ground clearance by an additional 8 feet from the preliminary design is considered for locations adjacent to populated areas.

Figure 3. Proposed 220 kV Structures Design - Segment 1 Model 1[44]


Looking North
Upgraded San Bernardino-Vista 220 kV
Upgraded Etiwanda –San Bernardino 220 kV
Upgraded El Casco-San Bernardino 220 kV
Upgraded Devers –San Bernardino 220 kV
Existing San Bernardino-Del Rosa-Vista 66 kV
Existing San Bernardino-Cardiff-Unimed-Vista 66 kV
Existing San Bernardino-Timoteo 66 kV
Existing San Bernardino-Redlands 66 kV

Magnetic Field Calculations: Figure 4 and Table 2 show the calculated magnetic field levels for the proposed design comparing existing and proposed design without and with field reduction measures.

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[44] Figure is not to scale.

Figure 4. Calculated Magnetic Field Levels[45] for Segment 1 Model 1 Proposed 220 kV Line Upgrade (Looking North)

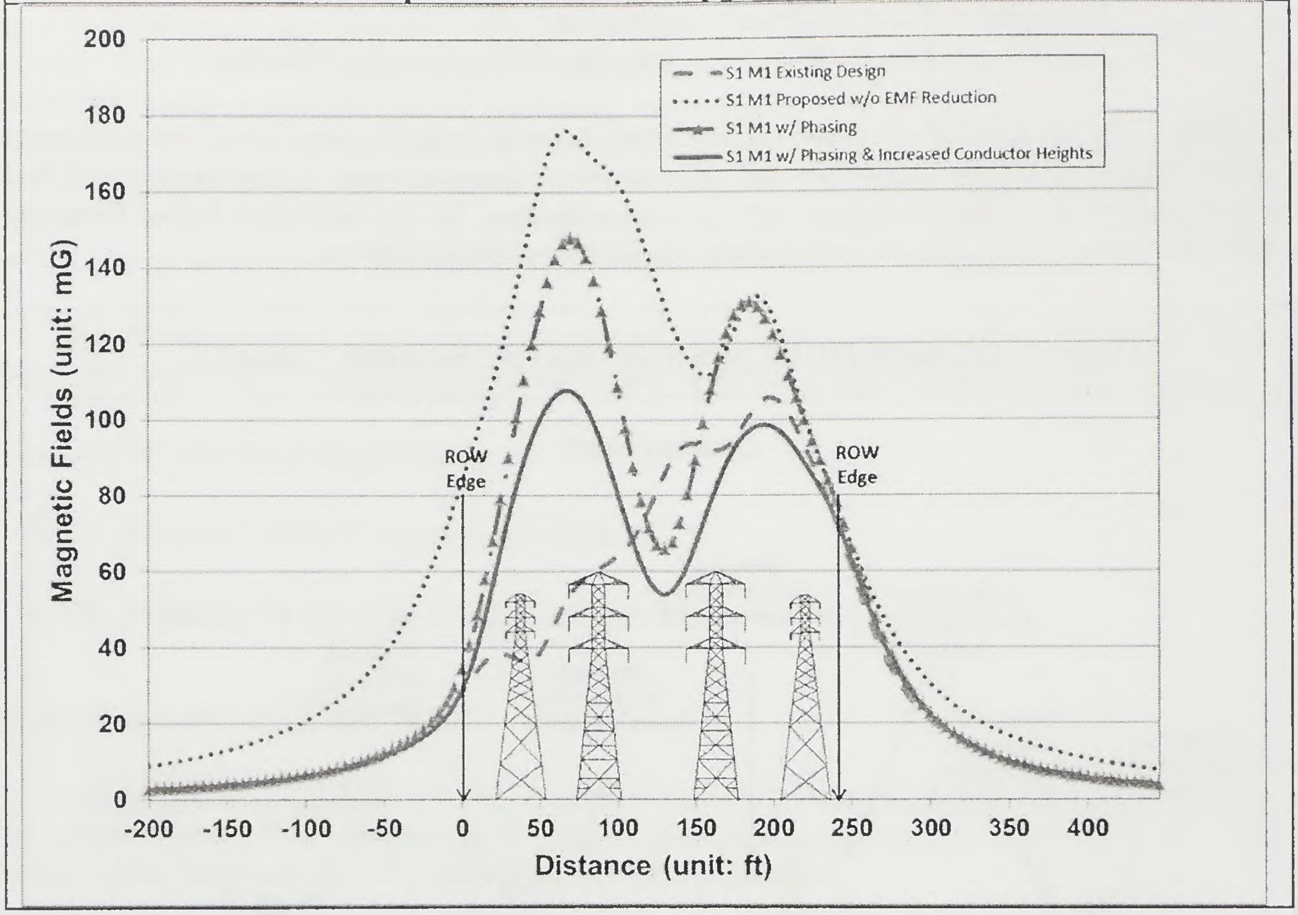

Table 2. Calculated Magnetic Field Levels[46] for Segment 1 Model 1

Design Options	West Edge of ROW (mG)	% Reduction[47]	East Edge of ROW (mG)	% Reduction
Existing	28.5	-	67.0	-
Proposed w/o EMF Reduction	83.9	-	72.5	-
Proposed w/ Phasing	34.4	59.0	72.4	0.1
Proposed w/ Phasing & Increased Conductor Heights	29.0	15.7	68.6	5.2

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[45] This figure shows calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

[46] This table lists calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

[47] "% Reduction" represents the percentage of reduction achieved with the implementation of the referenced no-cost and/or low-cost magnetic field reduction measures as compared to the proposed design in the previous row in this table.

Recommendations for Segment 1 Model 1: *The low-cost measure of raising structure heights or raising conductor ground clearance is recommended in this section near populated areas.*

Segment 1 – Model 2

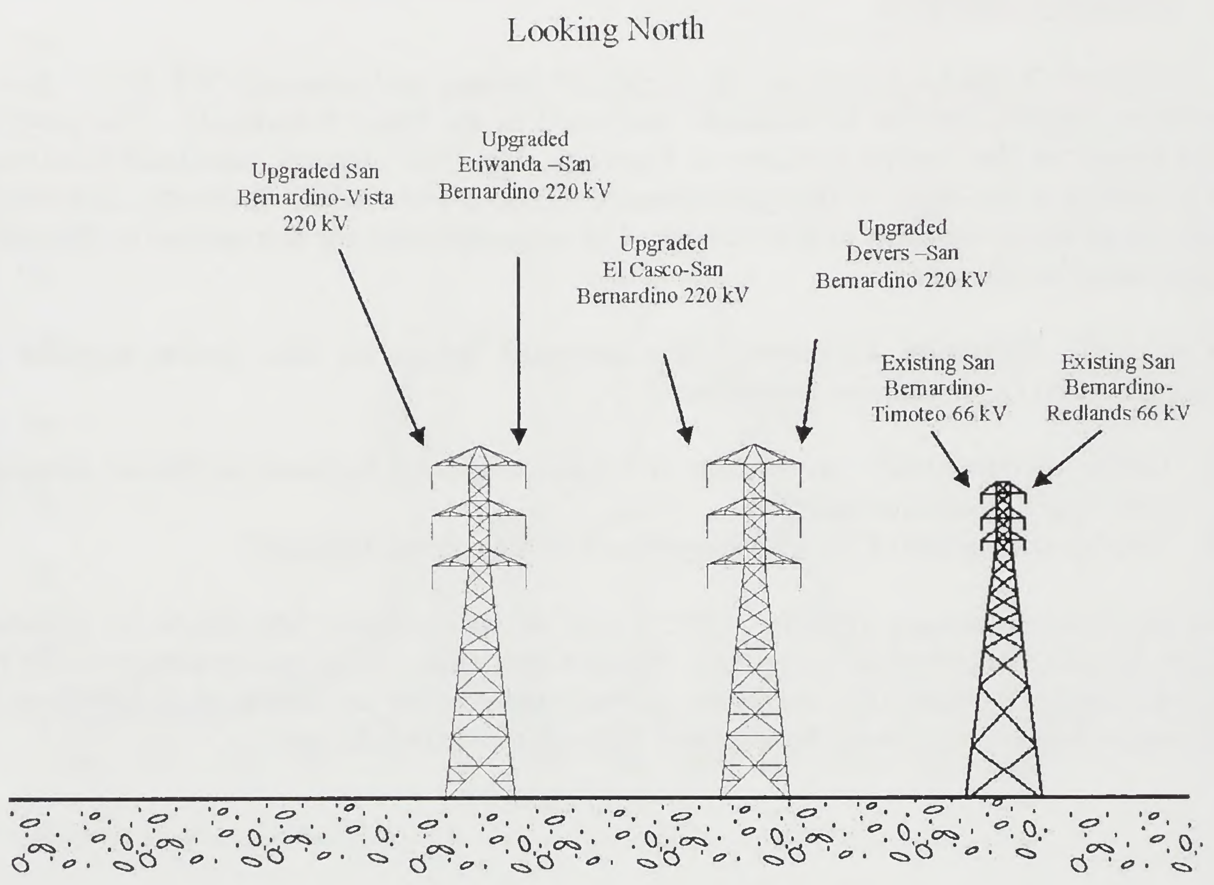
Segment 1 Model 2 analyzes the section of existing and proposed SCE ROW designs from West Lugonia Avenue to Redlands Boulevard in the City of Redlands. The proposed typical design for this section is shown in Figure 5. For EMF analysis, calculated field levels were evaluated at the edges of the approximately 225-foot wide ROW. Presently, there are no schools immediately adjacent to this section. The proposed route for this section is adjacent to commercial/industrial area.

No-Cost Field Reduction Measures: The proposed design for this section includes the following no-cost field reduction measures:

1. Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction
2. Arrange conductors of T/Ls for magnetic field reduction ("Phasing")

Low-Cost Field Reduction Options: The initial no-cost analysis was based on minimum structure heights of 110 feet above ground. The low-cost option of using a minimum of 125 feet structure heights or raising the conductor ground clearance by an additional 8 feet from the preliminary design is considered for locations adjacent to populated areas.

Figure 5. Proposed 220 kV Structures Design - Segment 1 Model 2[48]


Looking North
Upgraded San Bernardino-Vista 220 kV
Upgraded Etiwanda –San Bernardino 220 kV
Upgraded El Casco-San Bernardino 220 kV
Upgraded Devers –San Bernardino 220 kV
Existing San Bernardino-Timoteo 66 kV
Existing San Bernardino-Redlands 66 kV

Magnetic Field Calculations: Figure 6 and Table 3 show the calculated magnetic field levels for the proposed design comparing existing and proposed design without and with field reduction measures.

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[48] Figure is not to scale.

Figure 6. Calculated Magnetic Field Levels[49] for Segment 1 Model 2 Proposed 220 kV Line Upgrade (Looking North)

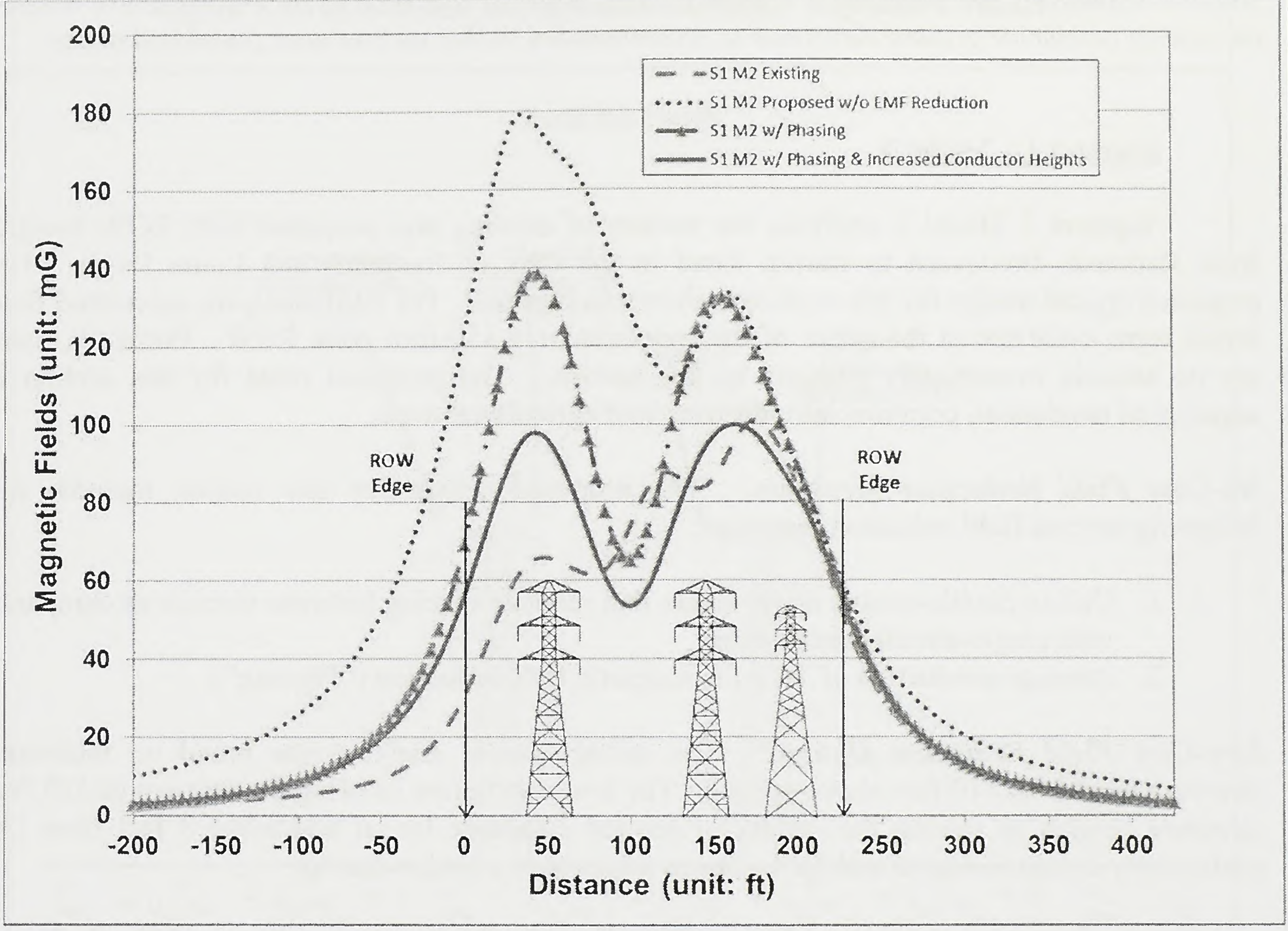


Table 3. Calculated Magnetic Field Levels[50] for Segment 1 Model 2

Design Options	West Edge of ROW (mG)	% Reduction[51]	East Edge of ROW (mG)	% Reduction
Existing	30.5	-	54.1	-
Proposed w/o EMF Reduction	123.0	-	61.5	-
Proposed w/ Phasing	69.2	43.7	59.6	3.1
Proposed w/ Phasing & Increased Conductor Heights	56.1	18.9	57.1	4.2

---

[49] This figure shows calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

[50] This table lists calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

[51] "% Reduction" represents the percentage of reduction achieved with the implementation of the referenced no-cost and/or low-cost magnetic field reduction measures as compared to the proposed design in the previous row in this table.

Recommendations for Segment 1 Model 2: *The low-cost measure of raising structure heights or raising conductor ground clearance is recommended in this section near populated areas.*

Segment 1 – Model 3

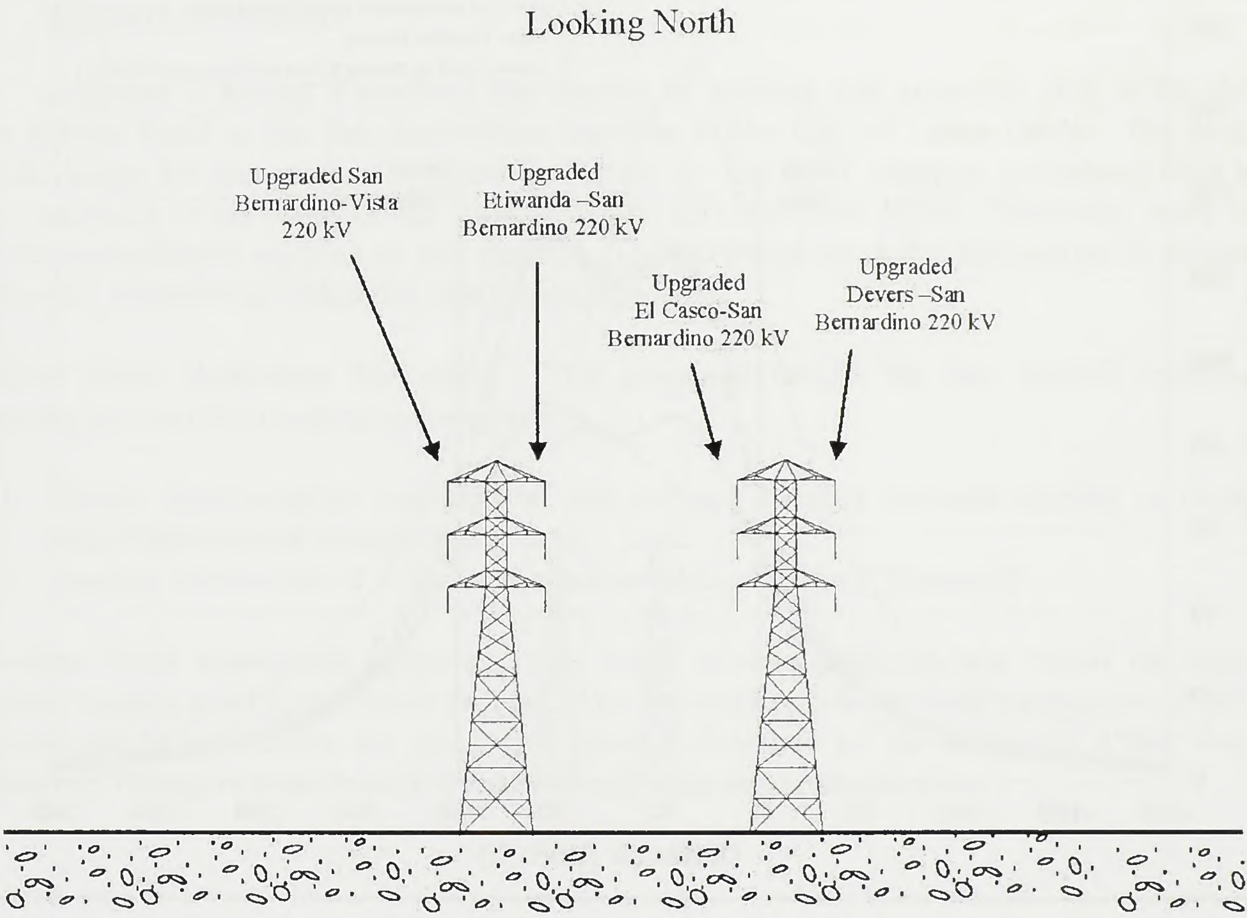
Segment 1 Model 3 analyzes the section of existing and proposed SCE ROW designs from Redlands Boulevard to Barton Road in the City of Redlands and Loma Linda. The proposed typical design for this section is shown in Figure 7. For EMF analysis, calculated field levels were evaluated at the edges of the approximately 150-foot wide ROW. Presently, there are no schools immediately adjacent to this section. The proposed route for this section is adjacent to residential, commercial/industrial, and agricultural areas.

No-Cost Field Reduction Measures: The proposed design for this section includes the following no-cost field reduction measures:

1. Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction
2. Arrange conductors of T/Ls for magnetic field reduction (“Phasing”)

Low-Cost Field Reduction Options: The initial no-cost analysis was based on minimum structure heights of 110 feet above ground. The low-cost option of using a minimum of 125 feet structure heights or raising the conductor ground clearance by an additional 8 feet from the preliminary design is considered for locations adjacent to populated areas.

Figure 7. Proposed 220 kV Structures Design - Segment 1 Model 3[52]


Looking North
Upgraded San Bernardino-Vista 220 kV
Upgraded Etiwanda –San Bernardino 220 kV
Upgraded El Casco-San Bernardino 220 kV
Upgraded Devers –San Bernardino 220 kV

Magnetic Field Calculations: Figure 8 and Table 4 show the calculated magnetic field levels for the proposed design comparing existing and proposed design without and with field reduction measures.

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[52] Figure is not to scale.

Figure 8. Calculated Magnetic Field Levels[53] for Segment 1 Model 3 Proposed 220 kV Line Upgrade (Looking North)

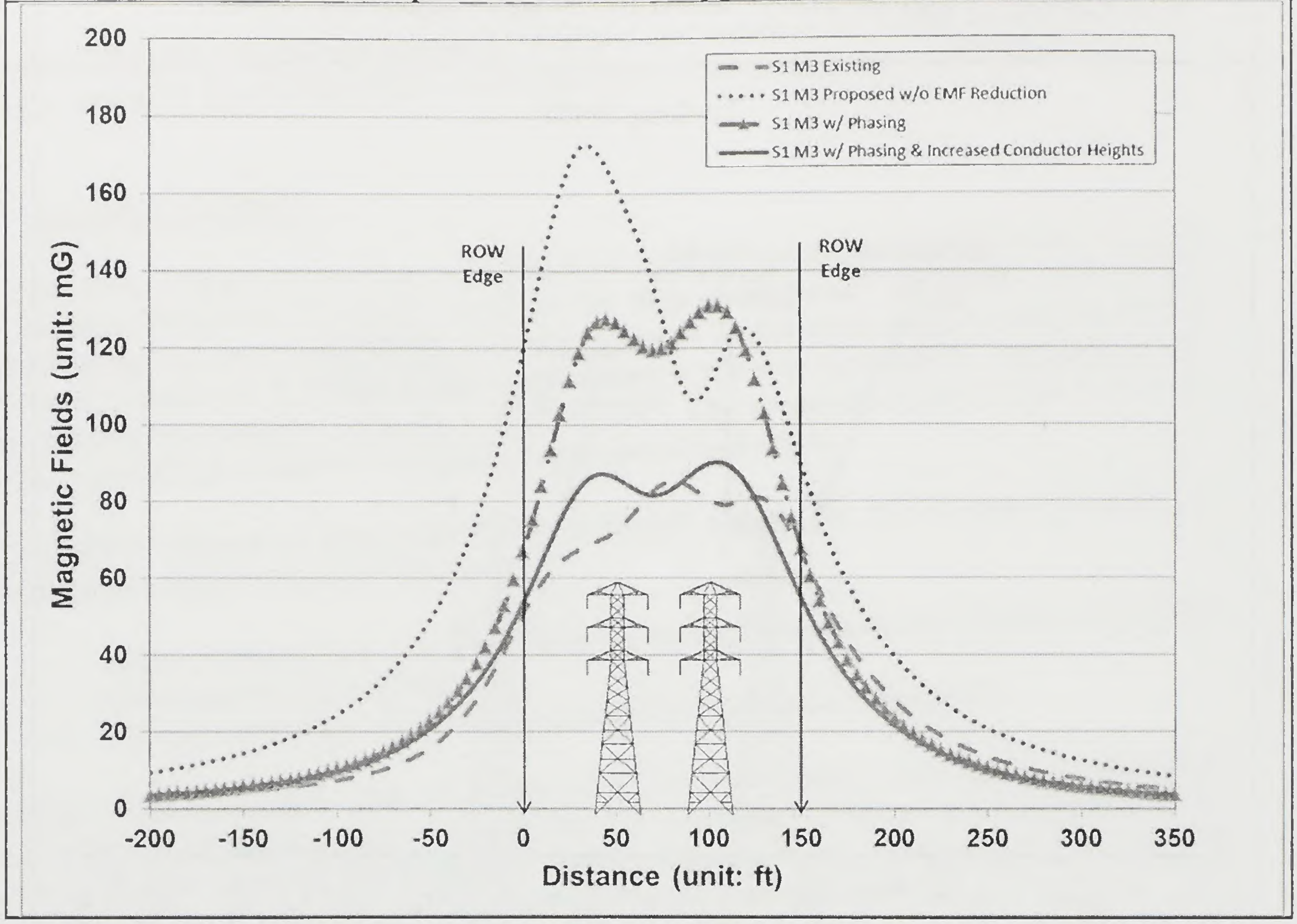


Table 4. Calculated Magnetic Field Levels[54] for Segment 1 Model 3

Design Options	West Edge of ROW (mG)	% Reduction[55]	East Edge of ROW (mG)	% Reduction
Existing	50.9	-	66.7	-
Proposed w/o EMF Reduction	119.2	-	89.4	-
Proposed w/ Phasing	67.0	43.8	67.8	24.2
Proposed w/ Phasing & Increased Conductor Heights	53.6	20.0	54.9	19.0

---

[53] This figure shows calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

[54] This table lists calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

[55] "% Reduction" represents the percentage of reduction achieved with the implementation of the referenced no-cost and/or low-cost magnetic field reduction measures as compared to the proposed design in the previous row in this table.

Recommendations for Segment 1 Model 3: *The low-cost measure of raising structure heights or raising conductor ground clearance is recommended in this section near populated areas.*

Segment 1 – Model 4

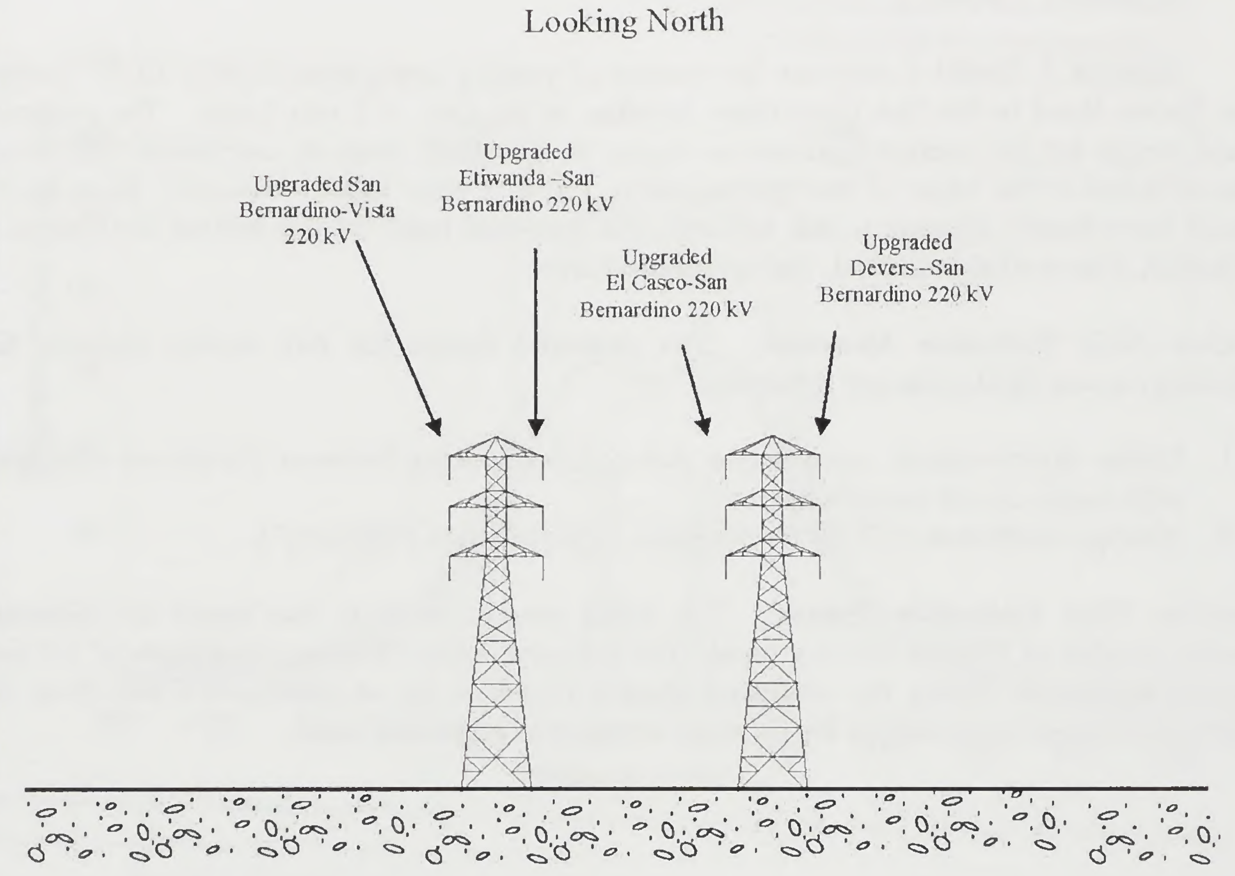
Segment 1 Model 4 analyzes the section of existing and proposed SCE ROW designs from Barton Road to the San Bernardino Junction in the City of Loma Linda. The proposed typical design for this section is shown in Figure 9. For EMF analysis, calculated field levels were evaluated at the edges of the approximately 150-foot wide ROW. Presently, there are no schools immediately adjacent to this section. The proposed route for this section is adjacent to residential, commercial/industrial, and agricultural area.

No-Cost Field Reduction Measures: The proposed design for this section includes the following no-cost field reduction measures:

1. Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction
2. Arrange conductors of T/Ls for magnetic field reduction ("Phasing")

Low-Cost Field Reduction Options: The initial no-cost analysis was based on minimum structure heights of 110 feet above ground. The low-cost option of using a minimum of 125 feet structure heights or raising the conductor ground clearance by an additional 8 feet from the preliminary design is considered for locations adjacent to populated areas.

Figure 9. Proposed 220 kV Structures Design - Segment 1 Model 4[56]


Looking North
Upgraded San Bernardino-Vista 220 kV
Upgraded Etiwanda -San Bernardino 220 kV
Upgraded El Casco-San Bernardino 220 kV
Upgraded Devers -San Bernardino 220 kV

Magnetic Field Calculations: Figure 10 and Table 5 show the calculated magnetic field levels for the proposed design comparing existing and proposed design without and with field reduction measures.

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[56] Figure is not to scale.

Figure 10. Calculated Magnetic Field Levels[57] for Segment 1 Model 4 Proposed 220 kV Line Upgrade (Looking North)

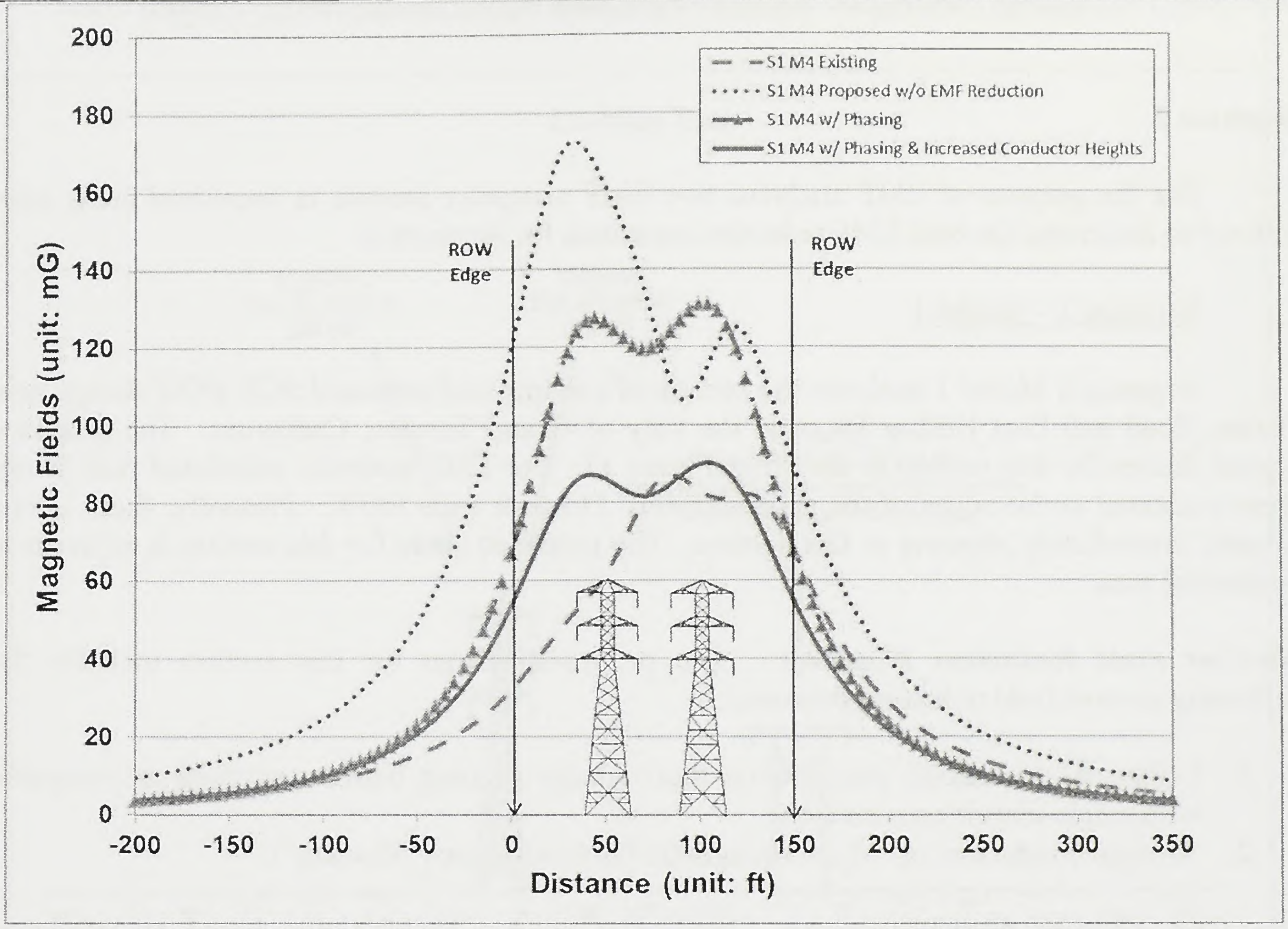


Table 5. Calculated Magnetic Field Levels[58] for Segment 1 Model 4

Design Options	West Edge of ROW (mG)	% Reduction[59]	East Edge of ROW (mG)	% Reduction
Existing	32.1	-	67.6	-
Proposed w/o EMF Reduction	119.2	-	89.4	-
Proposed w/ Phasing	67.0	43.8	67.8	24.2
Proposed w/ Phasing & Increased Conductor Heights	53.6	20.0	54.9	19.0

---

[57] This figure shows calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

[58] This table lists calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

[59] "% Reduction" represents the percentage of reduction achieved with the implementation of the referenced no-cost and/or low-cost magnetic field reduction measures as compared to the proposed design in the previous row in this table.

Recommendations for Segment 1 Model 4: The low-cost measure of raising structure heights or raising conductor ground clearance is recommended in this section near populated areas.

Segment 2

For the purpose of EMF analysis, two EMF computer models in populated areas were utilized to determine the best EMF reduction measures for Segment 2.

Segment 2 – Model 1

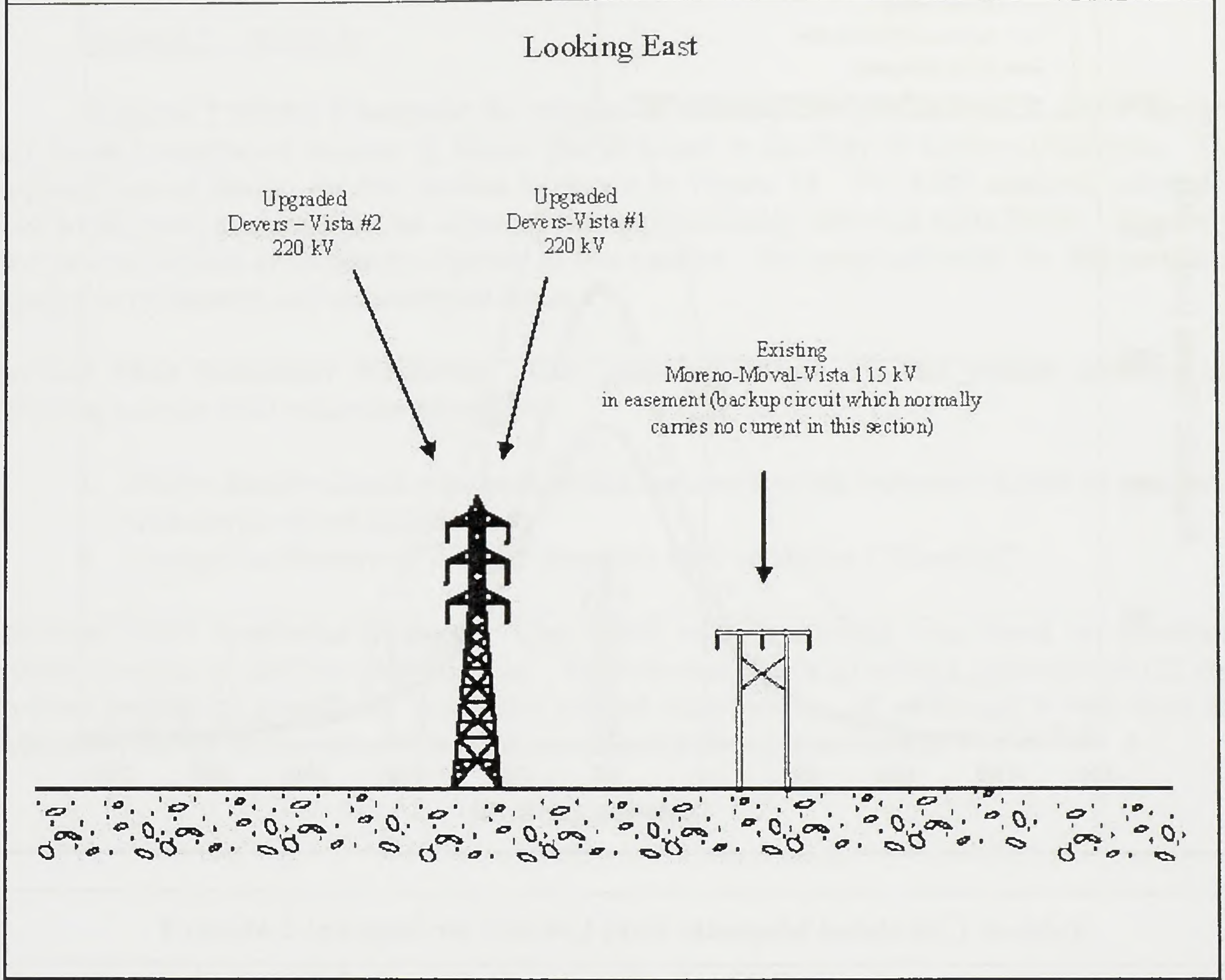
Segment 2 Model 1 analyzes the section of existing and proposed SCE ROW design near Barton Road and East Hilltop Drive in the City of Grand Terrace, California. The proposed typical design for this section is shown in Figure 11. For EMF analysis, calculated field levels were evaluated at the edges of the approximately 115-foot wide ROW. Presently, there are no schools immediately adjacent to this section. The proposed route for this section is adjacent to residential area.

No-Cost Field Reduction Measures: The proposed design for this section includes the following no-cost field reduction measures:

1. Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction
2. Arrange conductors of T/Ls for magnetic field reduction (“Phasing”)

Low-Cost Field Reduction Options: The initial no-cost analysis was based on minimum structure heights of 110 feet above ground. The low-cost option of using a minimum of 125 feet structure heights or raising the conductor ground clearance by an additional 8 feet from the preliminary design is considered for locations adjacent to populated areas.

Figure 11. Proposed 220 kV Structures Design - Segment 2 Model 1[60]


Looking East
Upgraded
Devers – Vista #2
220 kV
Upgraded
Devers-Vista #1
220 kV
Existing
Moreno-Moval-Vista 115 kV
in easement (backup circuit which normally
carries no current in this section)

Magnetic Field Calculations: Figure 12 and Table 6 show the calculated magnetic field levels for the proposed design comparing existing and proposed design without and with field reduction measures.

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[60] Figure is not to scale.

Figure 12. Calculated Magnetic Field Levels[61] for Segment 2 Model 1 Proposed 220 kV Line Upgrade (Looking East)

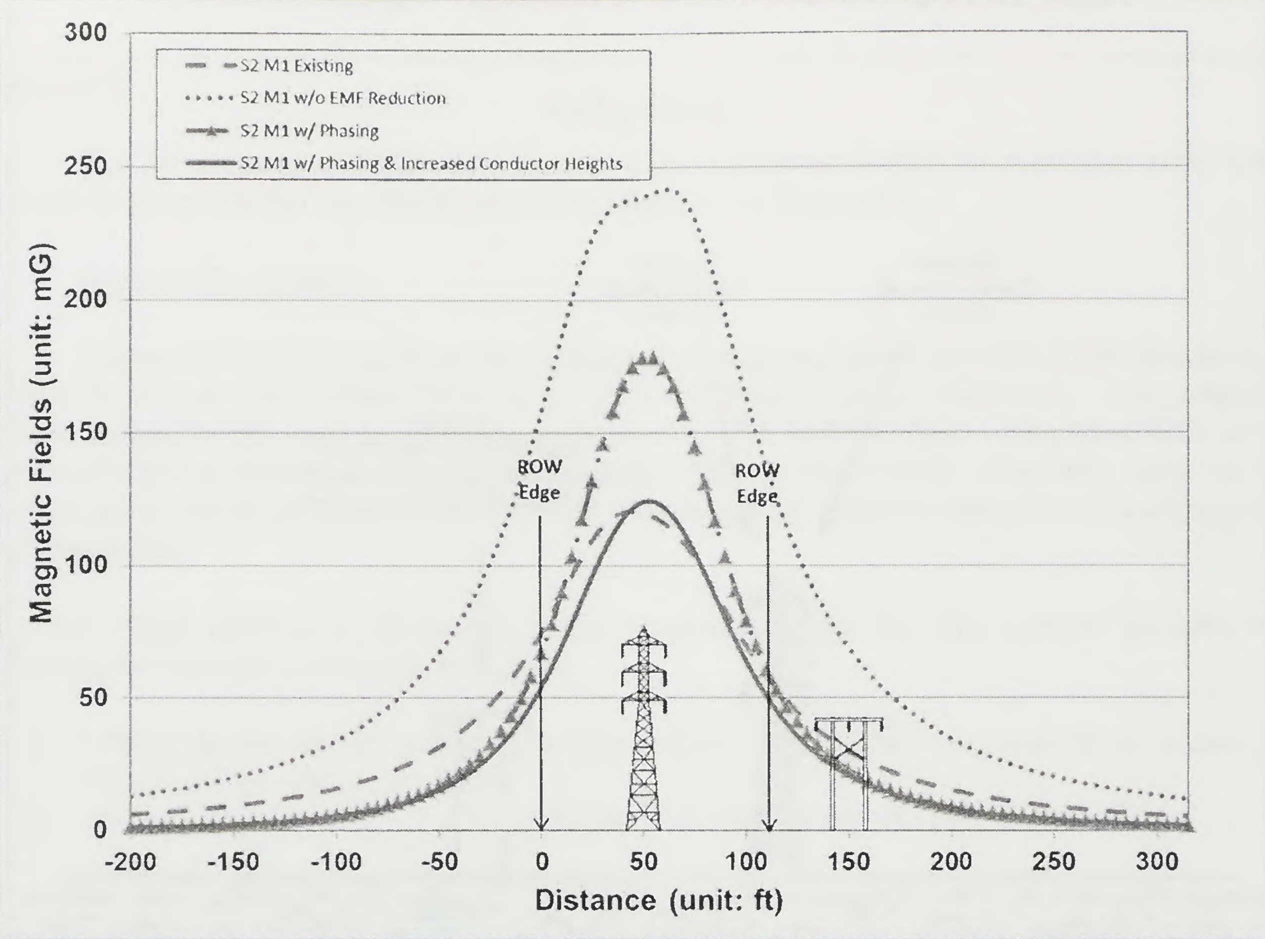


Table 6. Calculated Magnetic Field Levels[62] for Segment 2 Model 1

Design Options	North Edge of ROW (mG)	% Reduction[63]	South Edge of ROW (mG)	% Reduction
Existing	74.8	-	53.4	-
Proposed w/o EMF Reduction	158.3	-	125.1	-
Proposed w/ Phasing	67.2	57.5	53.1	57.6
Proposed w/ Phasing & Increased Conductor Heights	54.3	19.2	45.1	15.1

---

[61] This figure shows calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

[62] This table lists calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

[63] "% Reduction" represents the percentage of reduction achieved with the implementation of the referenced no-cost and/or low-cost magnetic field reduction measures as compared to the proposed design in the previous row in this table.

Recommendations for Segment 2 Model 1: *The low-cost measure of raising structure heights or raising conductor ground clearance is recommended in this section near populated areas.*

Segment 2 – Model 2

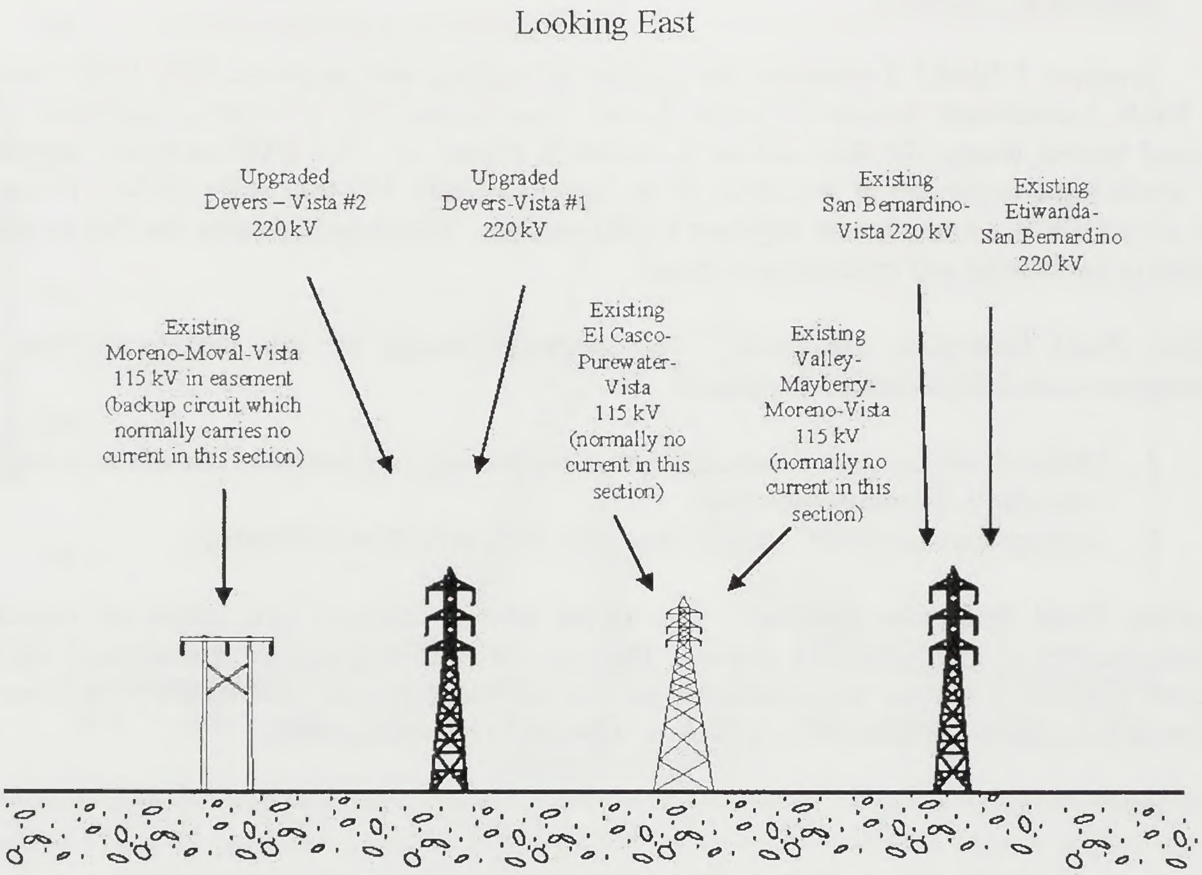
Segment 2 Model 2 analyzes the section of existing and proposed SCE ROW designs near South Lauralwood Avenue & South Walter Court in the City of Colton, California. The proposed typical design for this section is shown in Figure 13. For EMF analysis, calculated field levels were evaluated at the edges of the approximately 450-foot wide ROW. Presently, there are no schools immediately adjacent to this section. The proposed route for this section is adjacent to residential and undeveloped areas.

No-Cost Field Reduction Measures: The proposed design for this section includes the following no-cost field reduction measures:

1. Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction
2. Arrange conductors of T/Ls for magnetic field reduction ("Phasing")

Low-Cost Field Reduction Options: The initial no-cost analysis was based on minimum structure heights of 110 feet above ground. The low-cost option of using a minimum of 125 feet structure heights or raising the conductor ground clearance by an additional 8 feet from the preliminary design is considered for locations adjacent to populated areas.

Figure 13. Proposed 220 kV Structures Design - Segment 2 Model 2[64]


Looking East
Upgraded Devers – Vista #2 220 kV
Upgraded Devers-Vista #1 220 kV
Existing San Bernardino-Vista 220 kV
Existing Etiwanda-San Bernardino 220 kV
Existing Moreno-Moval-Vista 115 kV in easement (backup circuit which normally carries no current in this section)
Existing El Casco-Purewater-Vista 115 kV (normally no current in this section)
Existing Valley-Mayberry-Moreno-Vista 115 kV (normally no current in this section)

Magnetic Field Calculations: Figure 14 and Table 7 show the calculated magnetic field levels for the proposed design comparing existing and proposed design without and with field reduction measures.

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[64] Figure is not to scale.

Figure 14. Calculated Magnetic Field Levels[65] for Segment 2 Model 2 Proposed 220 kV Line Upgrade (Looking East)

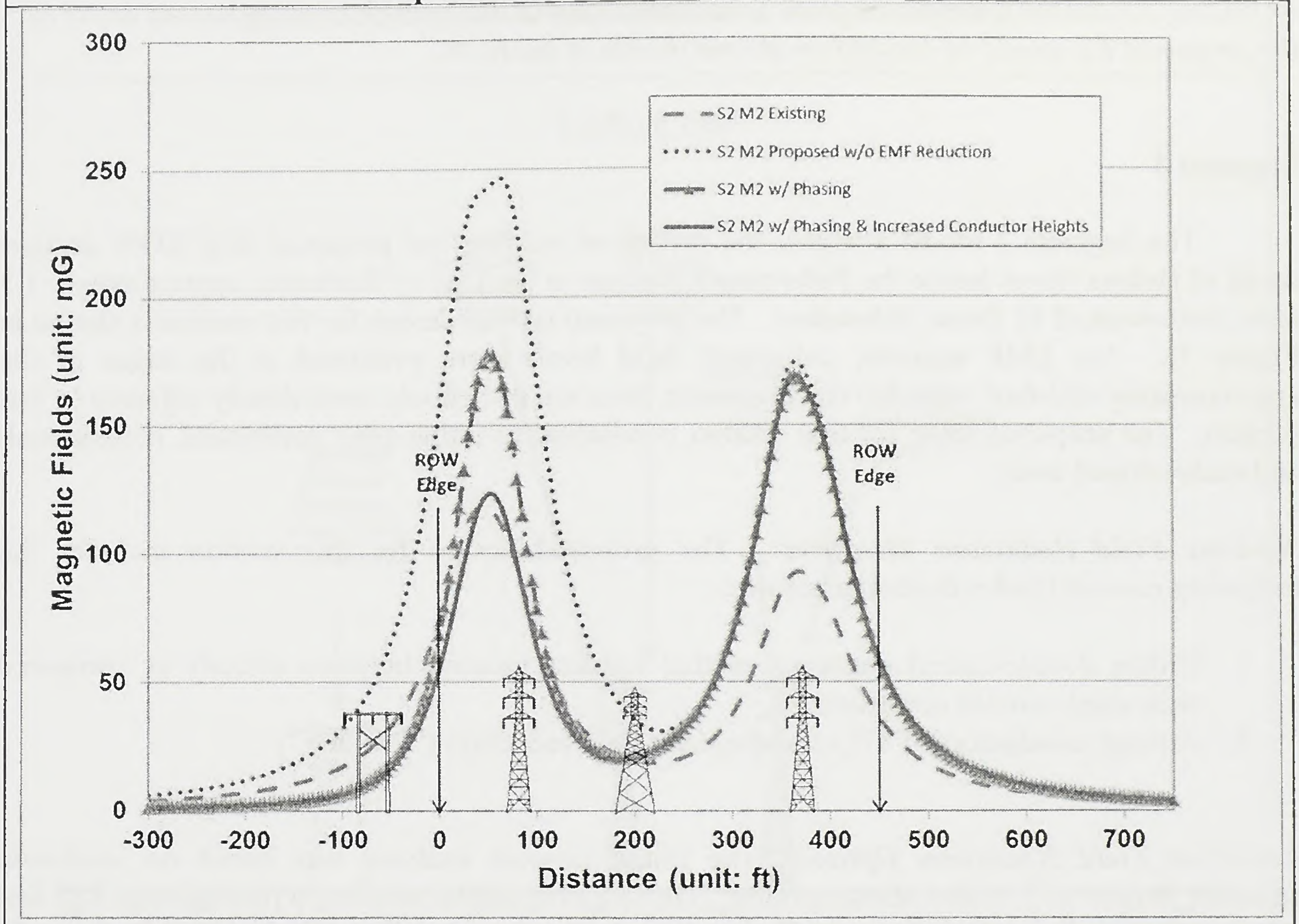


Table 7. Calculated Magnetic Field Levels[66] for Segment 2 Model 2				
Design Options	North Edge of ROW (mG)	% Reduction[67]	South Edge of ROW (mG)	% Reduction
Existing	75.0	-	36.1	-
Proposed w/o EMF Reduction	157.6	-	56.5	-
Proposed w/ Phasing	68.5	56.5	58.3	Less than 15% increase
Proposed w/ Phasing & Increased Conductor Heights	55.5	19.0	58.4	Less than 15% increase

---

[65] This figure shows calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

[66] This table lists calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

[67] "% Reduction" represents the percentage of reduction achieved with the implementation of the referenced no-cost and/or low-cost magnetic field reduction measures as compared to the proposed design in the previous row in this table.

Recommendations for Segment 2 Model 2: *The low-cost measure of raising structure heights or raising conductor ground clearance is recommended in this section near populated areas as the proposed T/L would be located on the north side of the ROW.*

Segment 3

The Segment 3 model analyzes the section of existing and proposed SCE ROW designs south of Helena Street inside the Fisherman's Retreat in the City of Redlands, approximately 1.3 mile north-west of El Casco Substation. The proposed typical design for this section is shown in Figure 15. For EMF analysis, calculated field levels were evaluated at the edges of the approximately 400-foot wide ROW. Presently, there are no schools immediately adjacent to this section. The proposed route for this section is adjacent to trailer-park residential, recreational, and undeveloped areas.

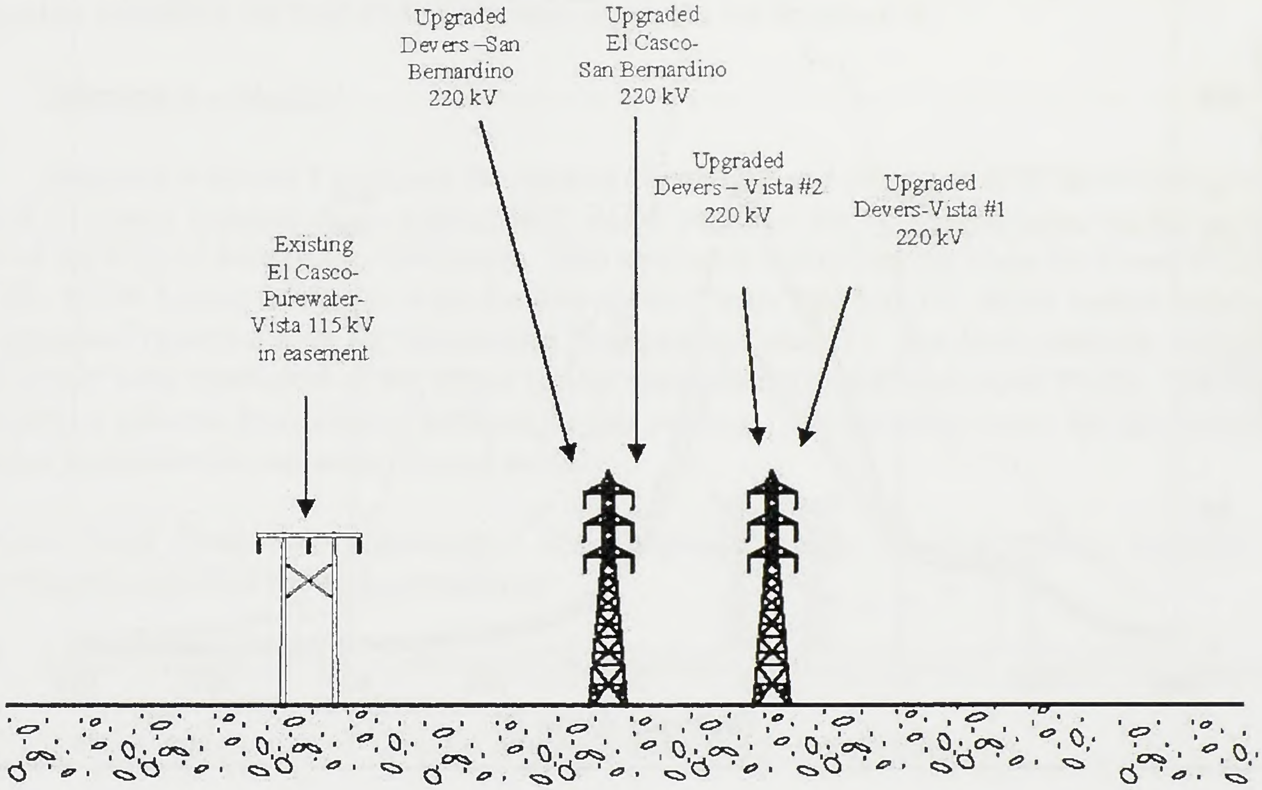
No-Cost Field Reduction Measures: The proposed design for this section includes the following no-cost field reduction measures:

1. Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction
2. Arrange conductors of T/Ls for magnetic field reduction ("Phasing")

Low-Cost Field Reduction Options: The initial no-cost analysis was based on minimum structure heights of 110 feet above ground. The low-cost option of using a minimum of 125 feet structure heights or raising the conductor ground clearance by an additional 8 feet from the preliminary design is considered for locations adjacent to populated areas.

Figure 15. Proposed 220 kV Structures Design - Segment 3[68]

Looking East



Magnetic Field Calculations: Figure 16 and Table 8 show the calculated magnetic field levels for the proposed design comparing existing and proposed design without and with field reduction measures.

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[68] Figure is not to scale.

Figure 16. Calculated Magnetic Field Levels[69] for Segment 3 Proposed 220 kV Line Upgrade (Looking East)

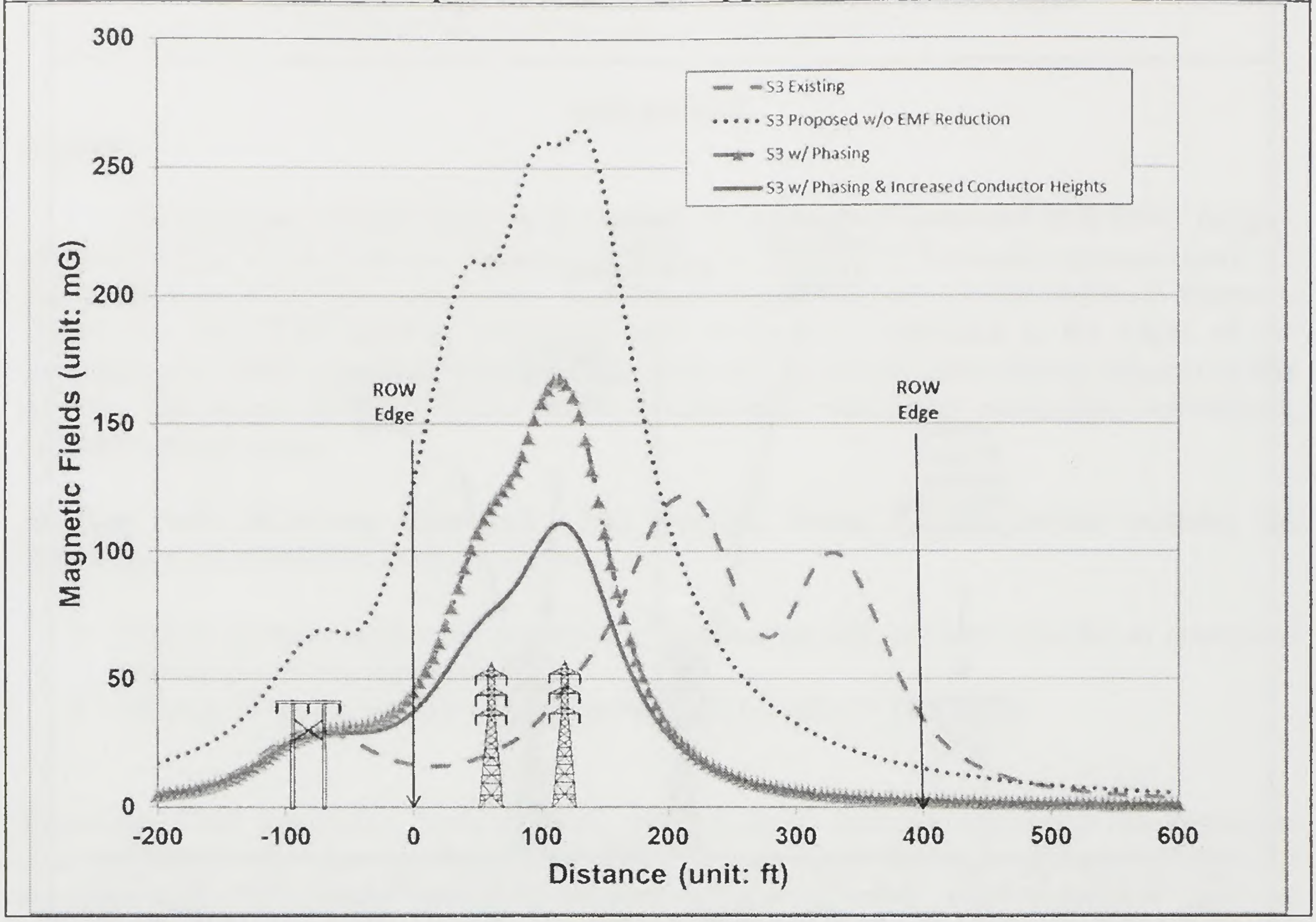

Table 8. Calculated Magnetic Field Levels[70] for Segment 3

Design Options	North Edge of ROW (mG)	% Reduction[71]	South Edge of ROW (mG)	% Reduction
Existing	16.5	-	34.0	-
Proposed w/o EMF Reduction	127.5	-	15.0	-
Proposed w/ Phasing	44.9	64.8	2.3	84.7
Proposed w/ Phasing & Increased Conductor Heights	37.5	16.5	2.2	4.3

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[69] This figure shows calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

[70] This table lists calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

[71] "% Reduction" represents the percentage of reduction achieved with the implementation of the referenced no-cost and/or low-cost magnetic field reduction measures as compared to the proposed design in the previous row in this table.

Recommendations for Segment 3: *The low-cost measure of raising structure heights or raising conductor ground clearance is recommended in this section near populated areas.*

Segment 4

For the purpose of EMF analysis, two EMF computer models in populated areas were utilized to determine the best EMF reduction measures for Segment 4.

Segment 4 – Model 1

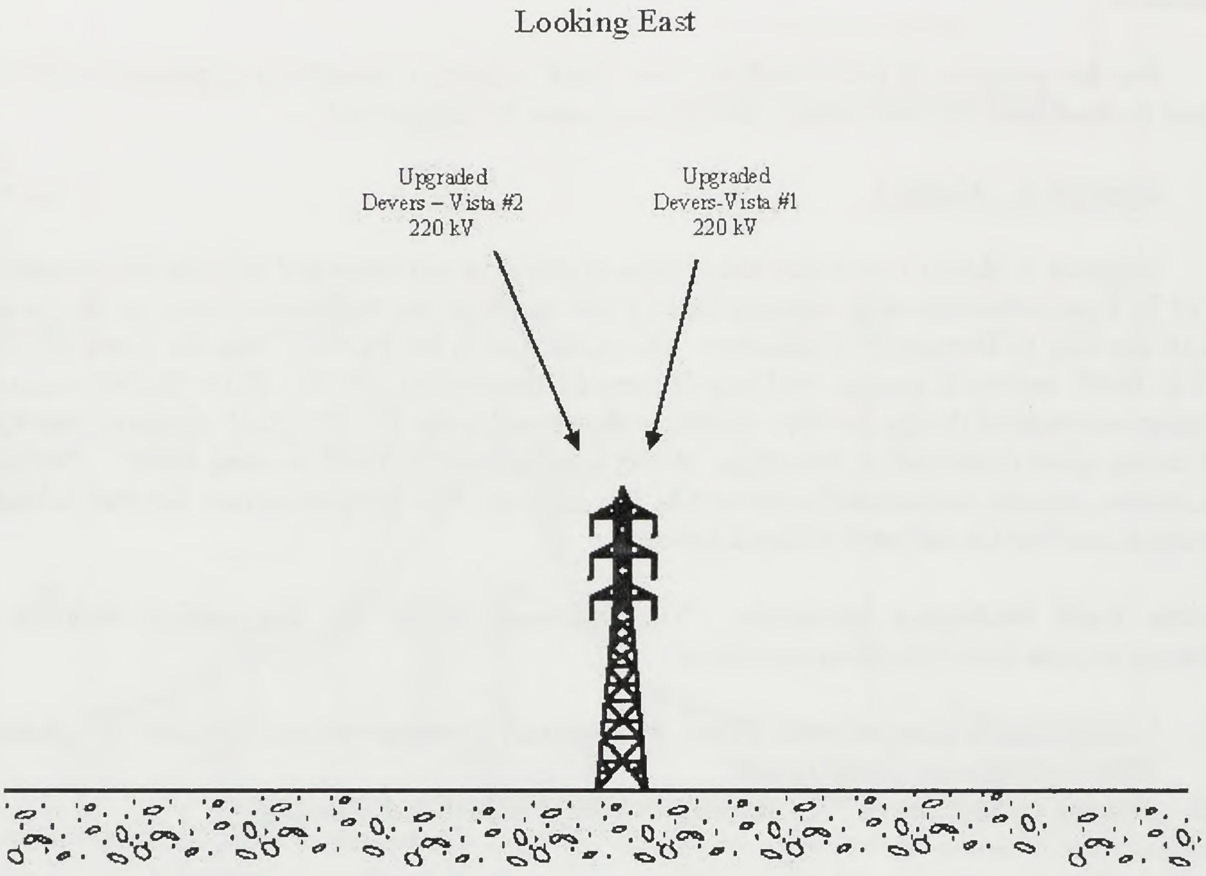
Segment 4 Model 1 analyzes the section of existing and proposed SCE ROW designs just east of El Casco Substation in existing SCE ROW north of the residential areas on the western limit of the City of Beaumont, California. This section is in the Devers-Vista No.1 and No.2 220 kV T/L ROW before it merges with the Devers-El Casco 220 kV T/L ROW further eastward. The proposed typical design for this section is shown in Figure 17. For EMF analysis, calculated field levels were evaluated at the edges of the approximately 300-foot wide ROW. Presently, there are no schools immediately adjacent to this section. The proposed route for this section is adjacent to residential and undeveloped areas.

No-Cost Field Reduction Measures: The proposed design for this section includes the following no-cost field reduction measures:

1. Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction
2. Arrange conductors of T/Ls for magnetic field reduction ("Phasing")

Low-Cost Field Reduction Options: The initial no-cost analysis was based on minimum structure heights of 110 feet above ground. The low-cost option of using a minimum of 125 feet structure heights or raising the conductor ground clearance by an additional 8 feet from the preliminary design is considered for locations adjacent to populated areas.

Figure 17. Proposed 220 kV Structures Design - Segment 4 Model 1[72]



Magnetic Field Calculations: Figure 18 and Table 9 show the calculated magnetic field levels for the proposed design comparing existing and proposed design without and with field reduction measures.

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[72] Figure is not to scale.

Figure 18. Calculated Magnetic Field Levels[73] for Segment 4 Model 1 Proposed 220 kV Line Upgrade (Looking East)

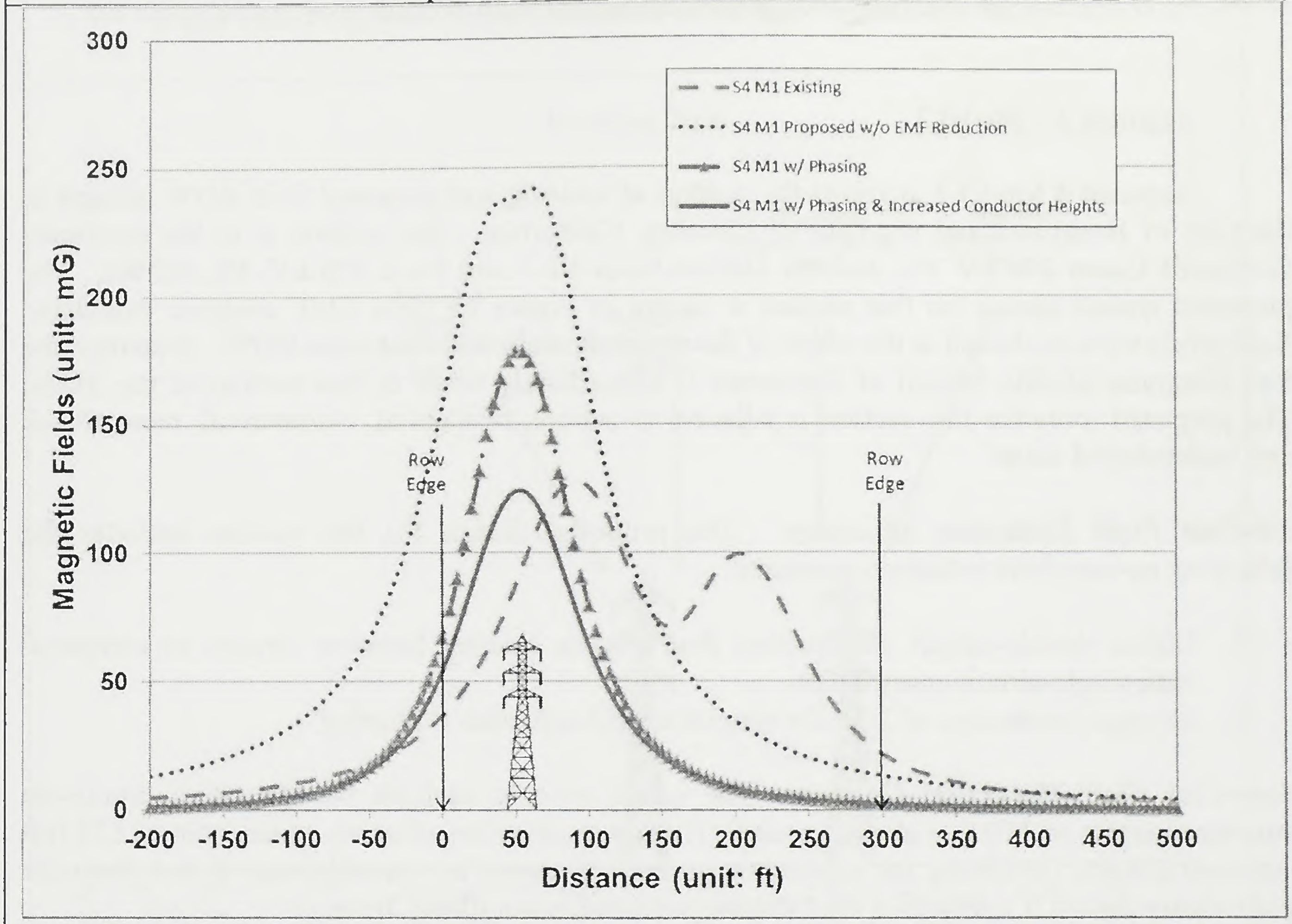

Table 9. Calculated Magnetic Field Levels[74] for Segment 4 Model 1

Design Options	North Edge of ROW (mG)	% Reduction[75]	South Edge of ROW (mG)	% Reduction
Existing	36.8	-	21.6	-
Proposed w/o EMF Reduction	158.3	-	13.3	-
Proposed w/ Phasing	67.2	57.5	2.4	82.0
Proposed w/ Phasing & Increased Conductor Heights	54.3	19.2	2.3	4.2

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[73] This figure shows calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

[74] This table lists calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

[75] "% Reduction" represents the percentage of reduction achieved with the implementation of the referenced no-cost and/or low-cost magnetic field reduction measures as compared to the proposed design in the previous row in this table.

Recommendations for Segment 4 Model 1: *The low-cost measure of raising structure heights or raising conductor ground clearance is recommended in this section near populated areas.*

Segment 4 – Model 2

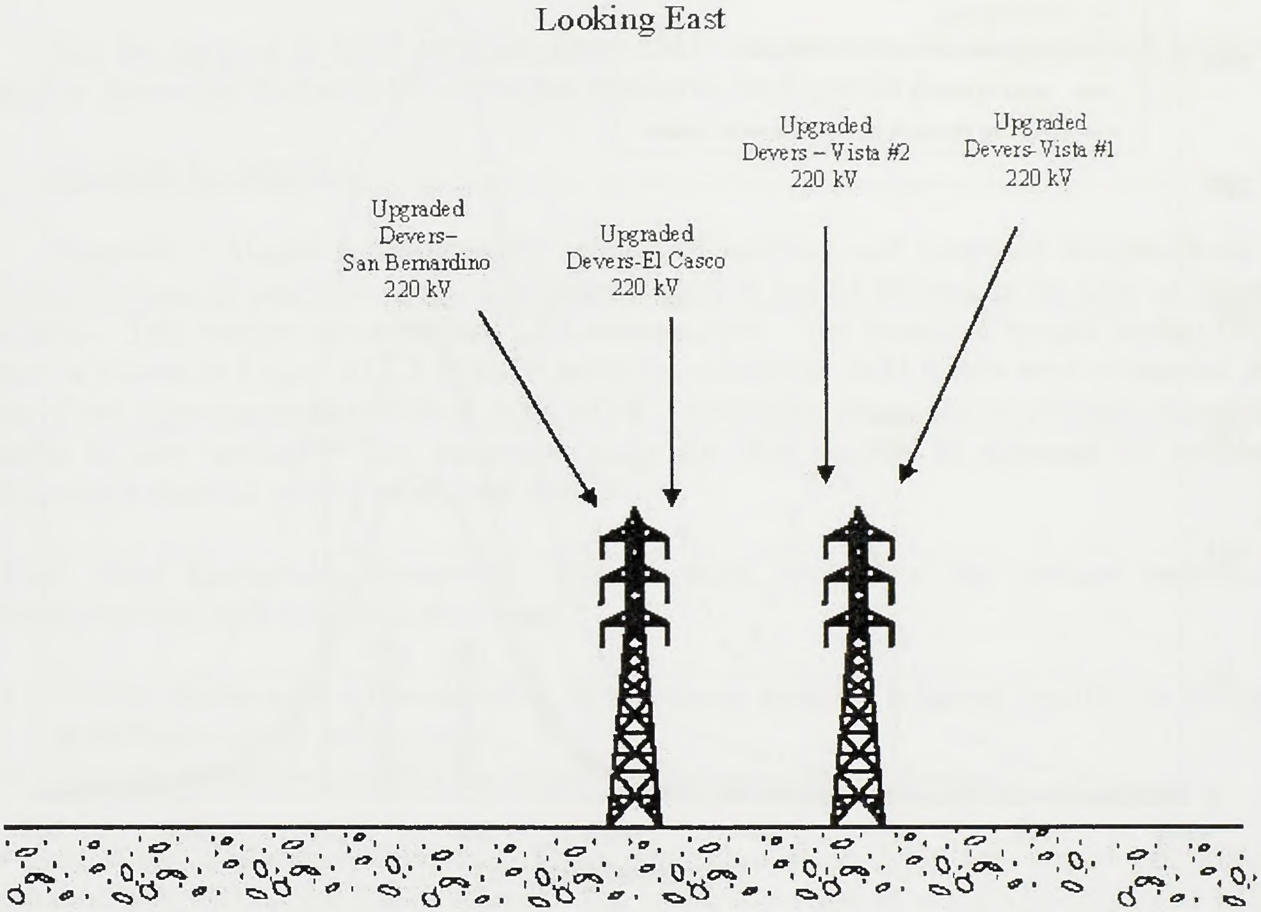
Segment 4 Model 2 analyzes the section of existing and proposed SCE ROW designs in the City of Beaumont and the City of Banning, California. This section is in the combined Devers-El Casco 220 kV T/L and the Devers-Vista No.1 and No.2 220 kV T/L ROWs. The proposed typical design for this section is shown in Figure 19. For EMF analysis, calculated field levels were evaluated at the edges of the approximately 400-foot wide ROW. Presently, the San Gorgonio Middle School of Beaumont is immediately north of this section of the ROW. The proposed route for this section is adjacent to school, residential, commercial, recreational, and undeveloped areas.

No-Cost Field Reduction Measures: The proposed design for this section includes the following no-cost field reduction measures:

1. Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction
2. Arrange conductors of T/Ls for magnetic field reduction ("Phasing")

Low-Cost Field Reduction Options: The initial no-cost analysis was based on minimum structure heights of 110 feet above ground. The low-cost option of using a minimum of 125 feet structure heights or raising the conductor ground clearance by an additional 8 feet from the preliminary design is considered for locations adjacent to populated areas.

Figure 19. Proposed 220 kV Structures Design - Segment 4 Model 2[76]


Looking East
Upgraded Devers–San Bernardino 220 kV
Upgraded Devers-El Casco 220 kV
Upgraded Devers – Vista #2 220 kV
Upgraded Devers-Vista #1 220 kV

Magnetic Field Calculations: Figure 20 and Table 10 show the calculated magnetic field levels for the proposed design comparing existing and proposed design without and with field reduction measures.

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[76] Figure is not to scale.

Figure 20. Calculated Magnetic Field Levels[77] for Segment 4 Model 2 Proposed 220 kV Line Upgrade (Looking East)

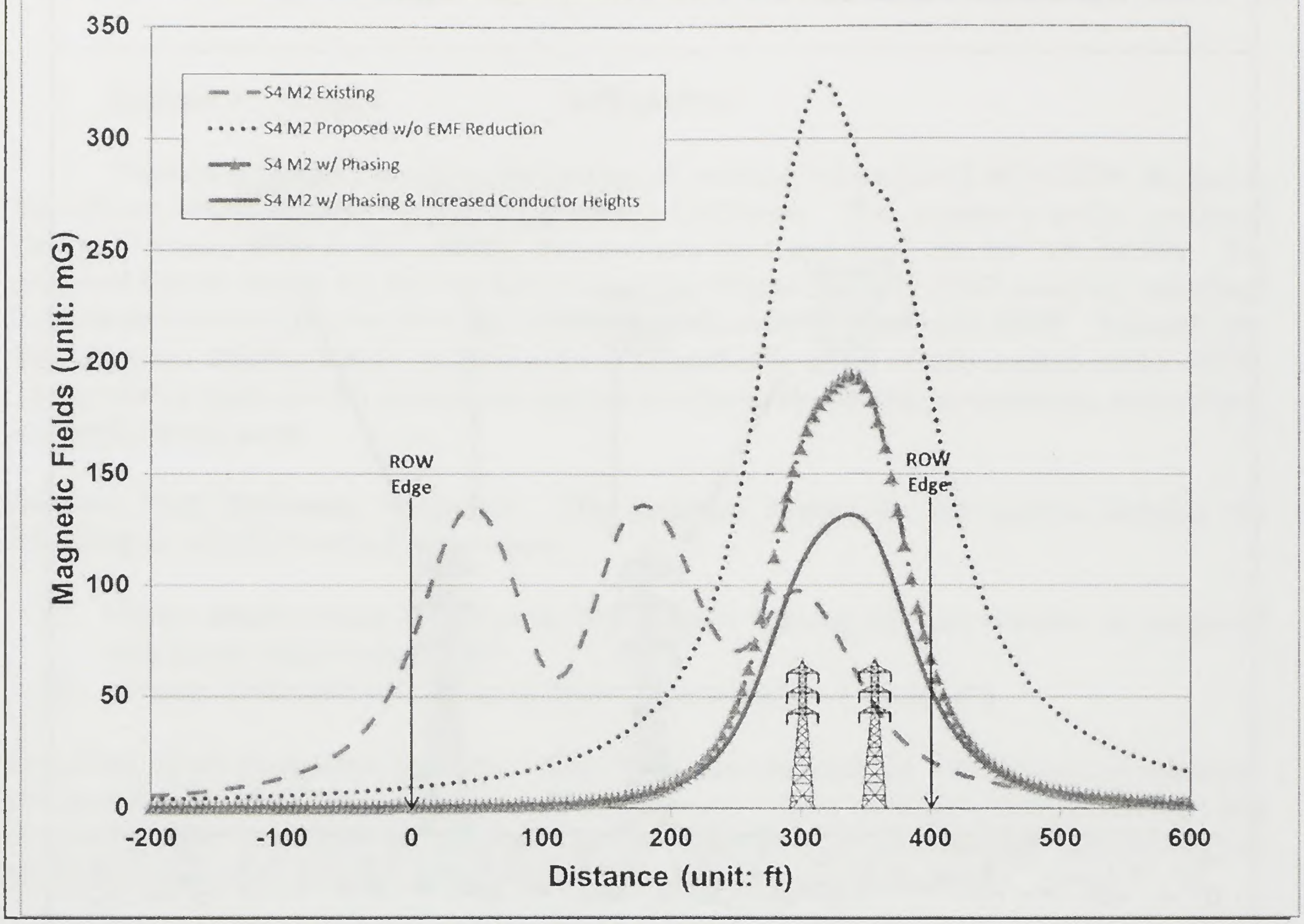


Table 10. Calculated Magnetic Field Levels[78] for Segment 4 Model 2				
Design Options	North Edge of ROW (mG)	% Reduction[79]	South Edge of ROW (mG)	% Reduction
Existing	74.3	-	21.0	-
Proposed w/o EMF Reduction	9.3	-	186.5	-
Proposed w/ Phasing	0.4	95.7	67.4	63.9
Proposed w/ Phasing & Increased Conductor Heights	0.4	0	53.6	20.5

---

[77] This figure shows calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

[78] This table lists calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

[79] "% Reduction" represents the percentage of reduction achieved with the implementation of the referenced no-cost and/or low-cost magnetic field reduction measures as compared to the proposed design in the previous row in this table.

Recommendations for Segment 4 Model 2: *The low-cost measure of raising structure heights or raising conductor ground clearance is recommended in this section near populated areas.*

Segment 5

For the purpose of EMF analysis, three EMF computer models in populated areas were utilized to determine the best EMF reduction measures for Segment 5.

Segment 5 – Model 1

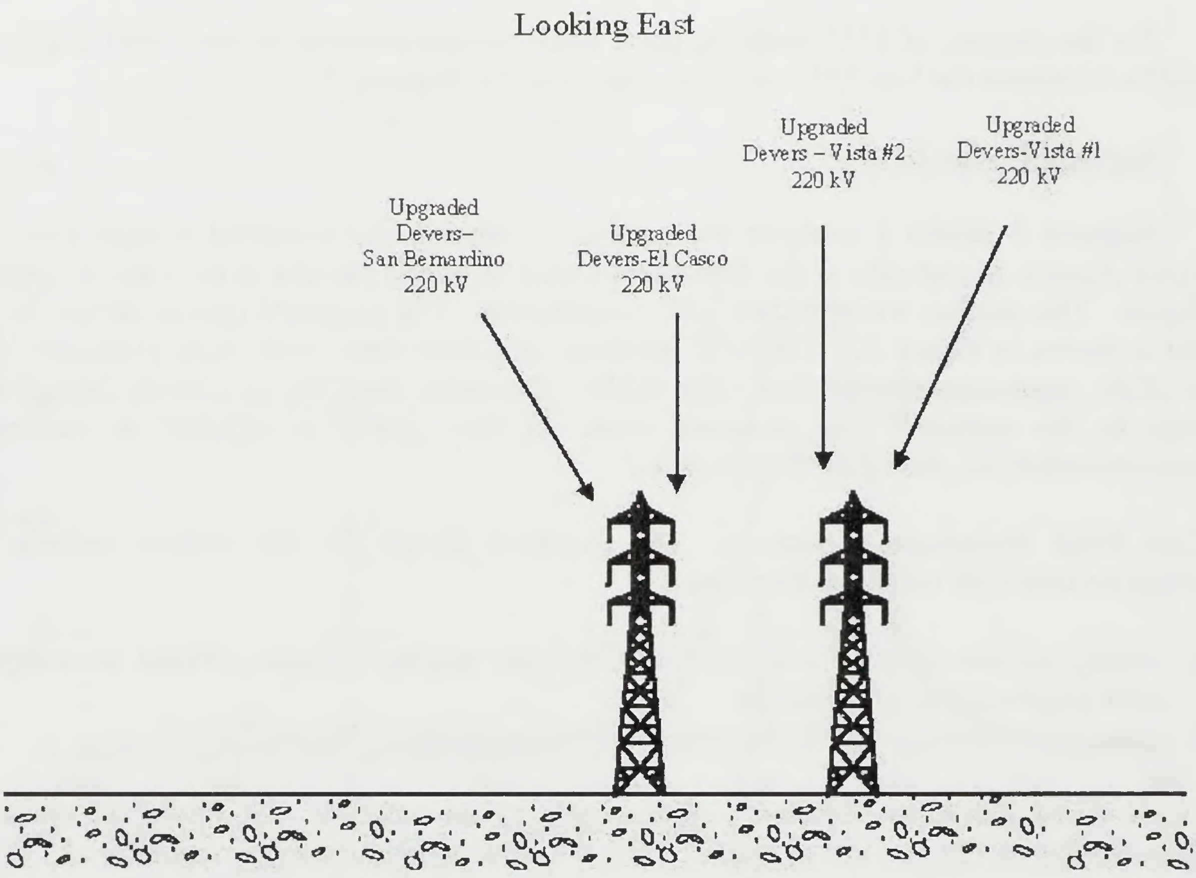
Segment 5 Model 1 analyzes the section of existing and proposed designs from San Gorgonio Avenue to east side of the Robertson's sand & gravel pit area in the City of Banning, California. This section would utilize LST construction. The proposed typical design for this section is shown in Figure 21. For EMF analysis, calculated field levels were evaluated at the edges of the approximately 400-foot wide ROW. Presently, there are no schools immediately adjacent to this section. The proposed route for this section is adjacent to residential, commercial/industrial, and undeveloped areas.

No-Cost Field Reduction Measures: The proposed design for this section includes the following no-cost field reduction measures:

1. Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction
2. Arrange conductors of T/Ls for magnetic field reduction ("Phasing")

Low-Cost Field Reduction Options: The initial no-cost analysis was based on minimum structure heights of 110 feet above ground. The low-cost option of using a minimum of 125 feet structure heights or raising the conductor ground clearance by an additional 8 feet from the preliminary design is considered for locations adjacent to populated areas.

Figure 21. Proposed 220 kV Structures Design - Segment 5 Model 1[80]


Looking East
Upgraded Devers – Vista #2 220 kV
Upgraded Devers-Vista #1 220 kV
Upgraded Devers– San Bernardino 220 kV
Upgraded Devers-El Casco 220 kV

Magnetic Field Calculations: Figure 22 and Table 11 show the calculated magnetic field levels for the proposed design comparing existing and proposed design without and with field reduction measures.

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[80] Figure is not to scale.

Figure 22. Calculated Magnetic Field Levels[81] for Segment 5 Model 1 Proposed 220 kV Line Upgrade (Looking East)

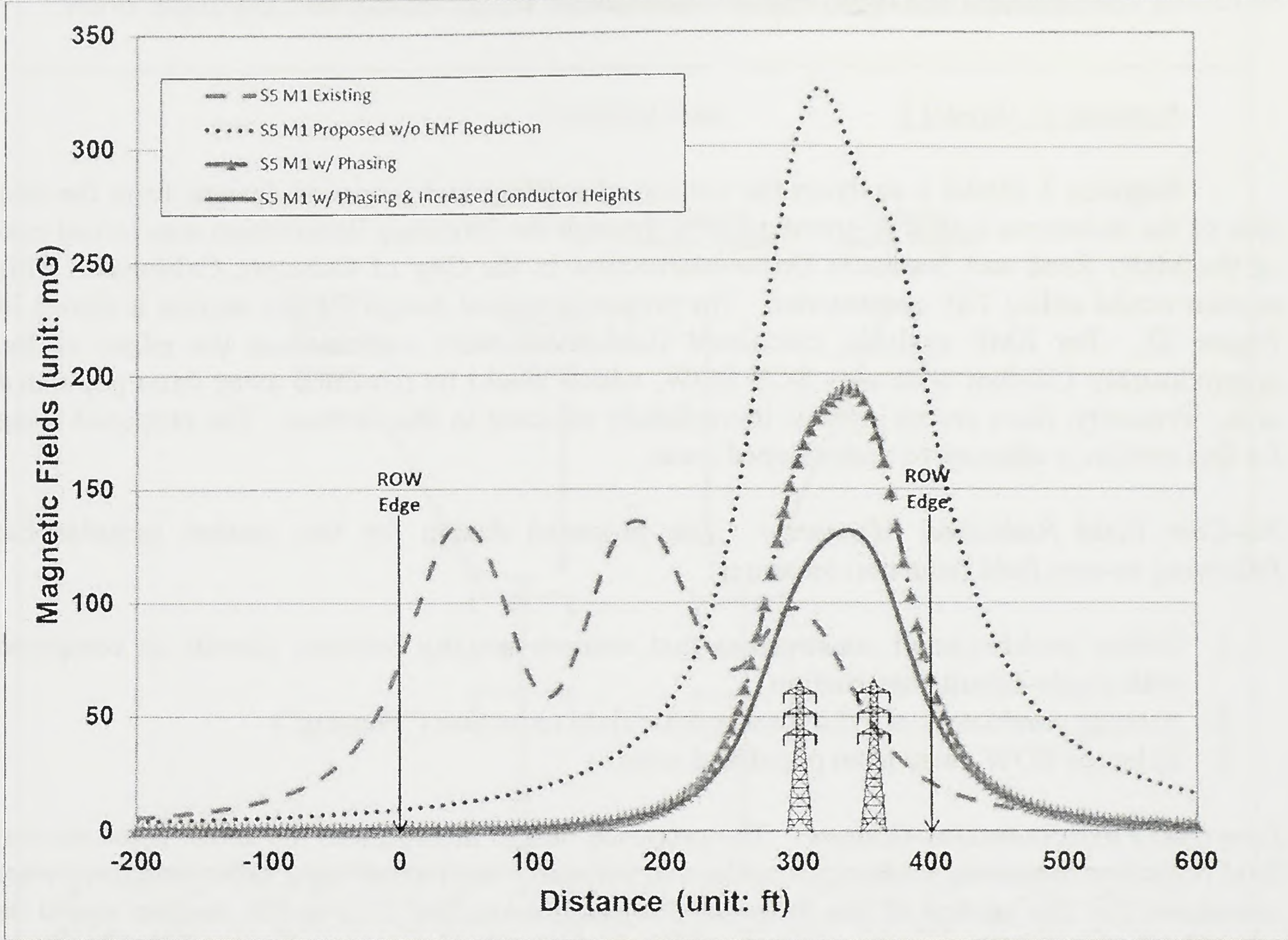


Table 11. Calculated Magnetic Field Levels[82] for Segment 5 Model 1

Design Options	North Edge of ROW (mG)	% Reduction[83]	South Edge of ROW (mG)	% Reduction
Existing	74.3	-	21.0	-
Proposed w/o EMF Reduction	9.3	-	186.5	-
Proposed w/ Phasing	0.4	95.7	67.4	63.9
Proposed w/ Phasing & Increased Conductor Heights	0.4	0	53.6	20.5

---

[81] This figure shows calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

[82] This table lists calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

[83] "% Reduction" represents the percentage of reduction achieved with the implementation of the referenced no-cost and/or low-cost magnetic field reduction measures as compared to the proposed design in the previous row in this table.

Recommendations for Segment 5 Model 1: *The low-cost measure of raising structure heights or raising conductor ground clearance is recommended in this section near populated areas.*

Segment 5 – Model 2

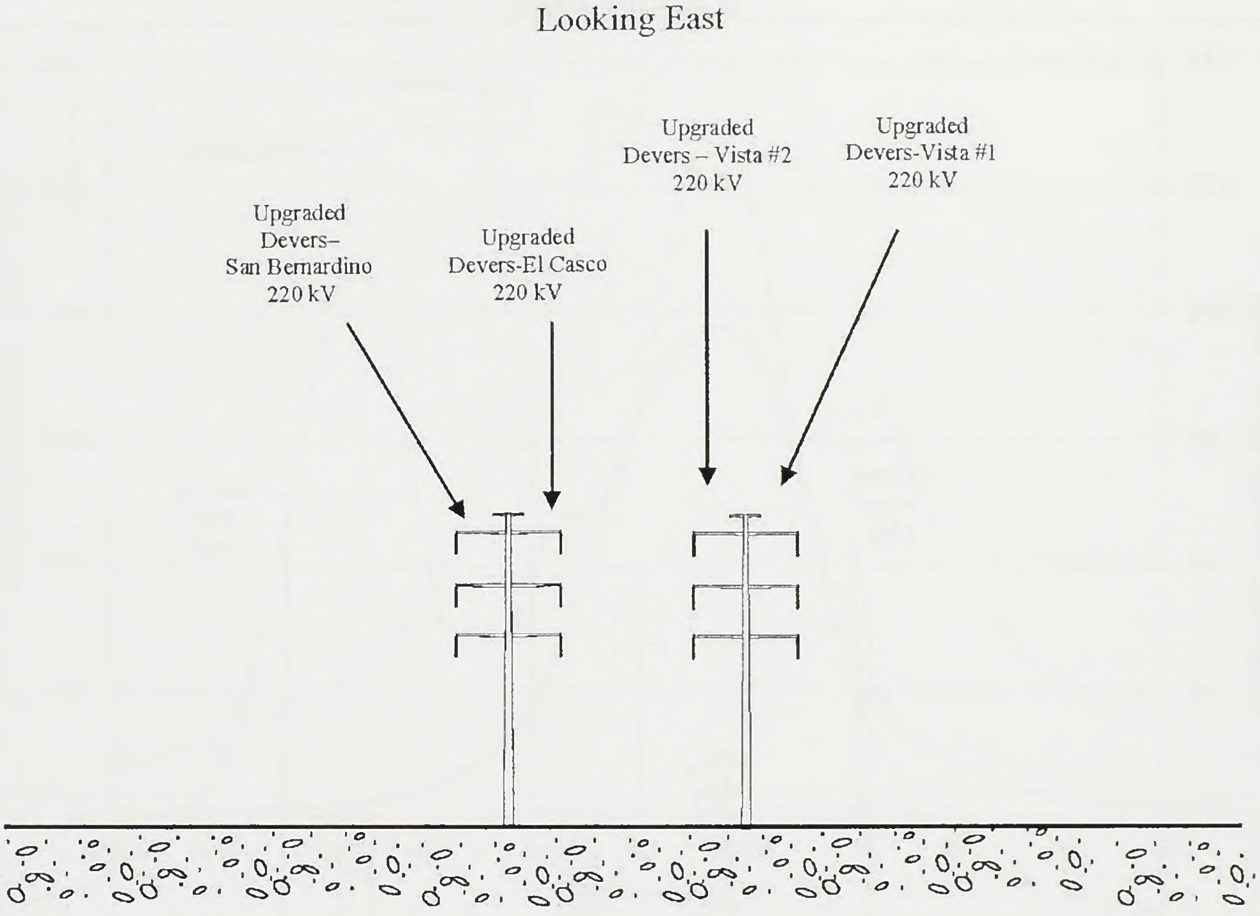
Segment 5 Model 2 analyzes the section of existing and proposed designs from the east side of the Robertson's sand & gravel pit area through the Morongo Reservation area to just east of the Malki Road and Seminole Drive intersection in the City of Cabazon, California. This section would utilize TSP construction. The proposed typical design for this section is shown in Figure 23. For EMF analysis, calculated field levels were evaluated at the edges of the approximately 150-foot wide new SCE ROW, which would be relocated away from populated area. Presently, there are no schools immediately adjacent to this section. The proposed route for this section is adjacent to undeveloped areas.

No-Cost Field Reduction Measures: The proposed design for this section includes the following no-cost field reduction measures:

1. Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction
2. Arrange conductors of T/Ls for magnetic field reduction ("Phasing")
3. Relocate ROW away from populated areas

Low-Cost Field Reduction Options: The proposed design incorporates the above listed no-cost field reduction measures; no low-cost reduction measures such as utilizing taller structures were considered for this section of the Proposed Project because the T/Ls in this section would be relocated to new ROW away from populated areas.

Figure 23. Proposed 220 kV Structures Design - Segment 5 Model 2[84]


Looking East
Upgraded Devers– San Bernardino 220 kV
Upgraded Devers-El Casco 220 kV
Upgraded Devers – Vista #2 220 kV
Upgraded Devers-Vista #1 220 kV

Magnetic Field Calculations: Figure 24 and Table 12 show the calculated magnetic field levels for the proposed design comparing existing and proposed design without and with field reduction measures.

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[84] Figure is not to scale.

For informational purpose, Figure 24 and Table 12 show the calculated magnetic field values of existing configuration in the existing ROW.

Figure 24. Calculated Magnetic Field Levels[85] for Segment 5 Model 2 in Existing ROW (Looking East)

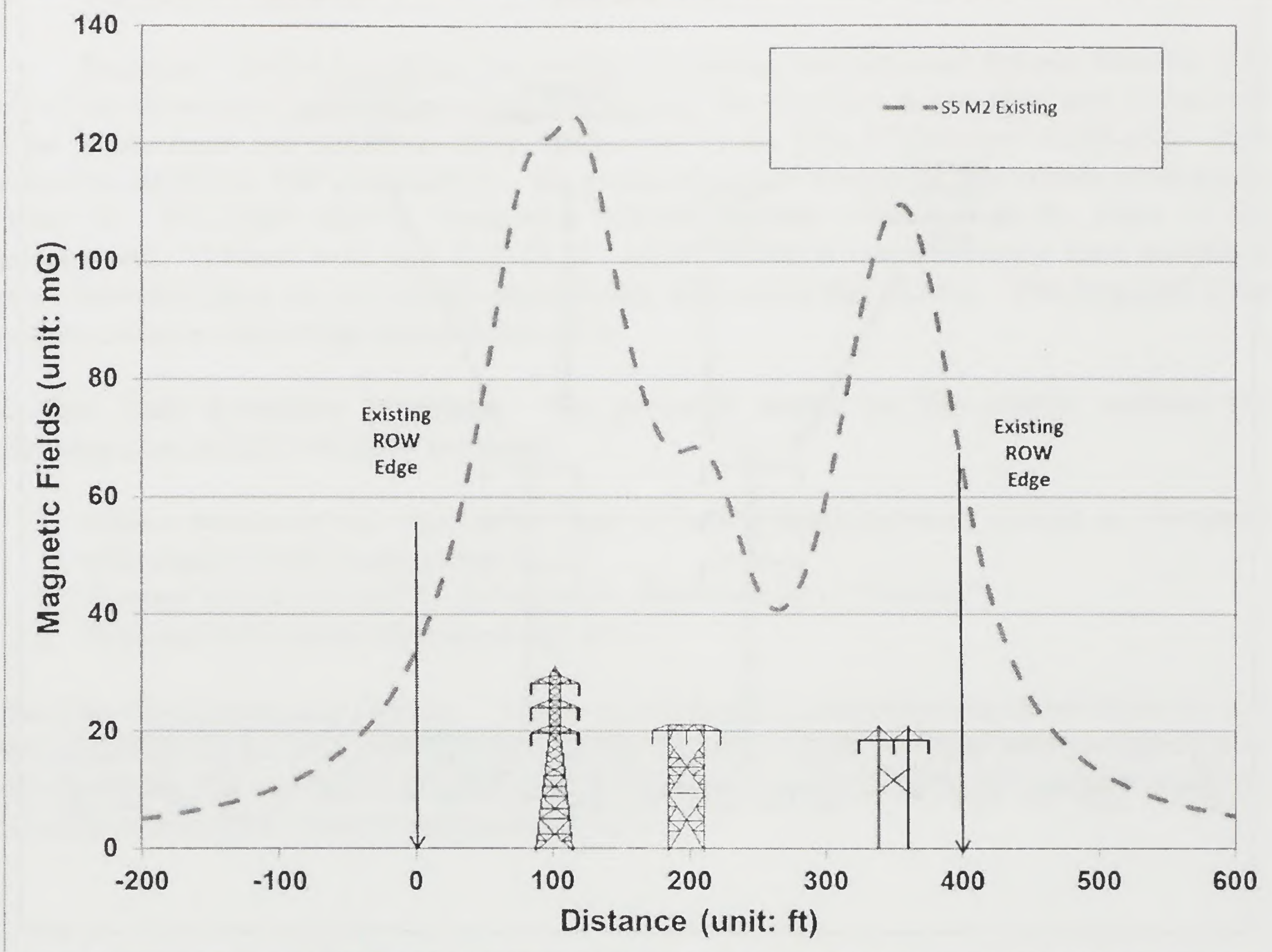


Table 12. Calculated Existing Magnetic Field Levels[86] for Segment 5 Model 2

Design Options	North Edge of ROW (mG)	% Reduction	South Edge of ROW (mG)	% Reduction
Existing	33.9	-	64.4	-

---

[85] This figure shows calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

[86] This table lists calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

Figure 25. Calculated Magnetic Field Levels[87] for Segment 5 Model 2 Proposed 220 kV Line Upgrade (Looking East)

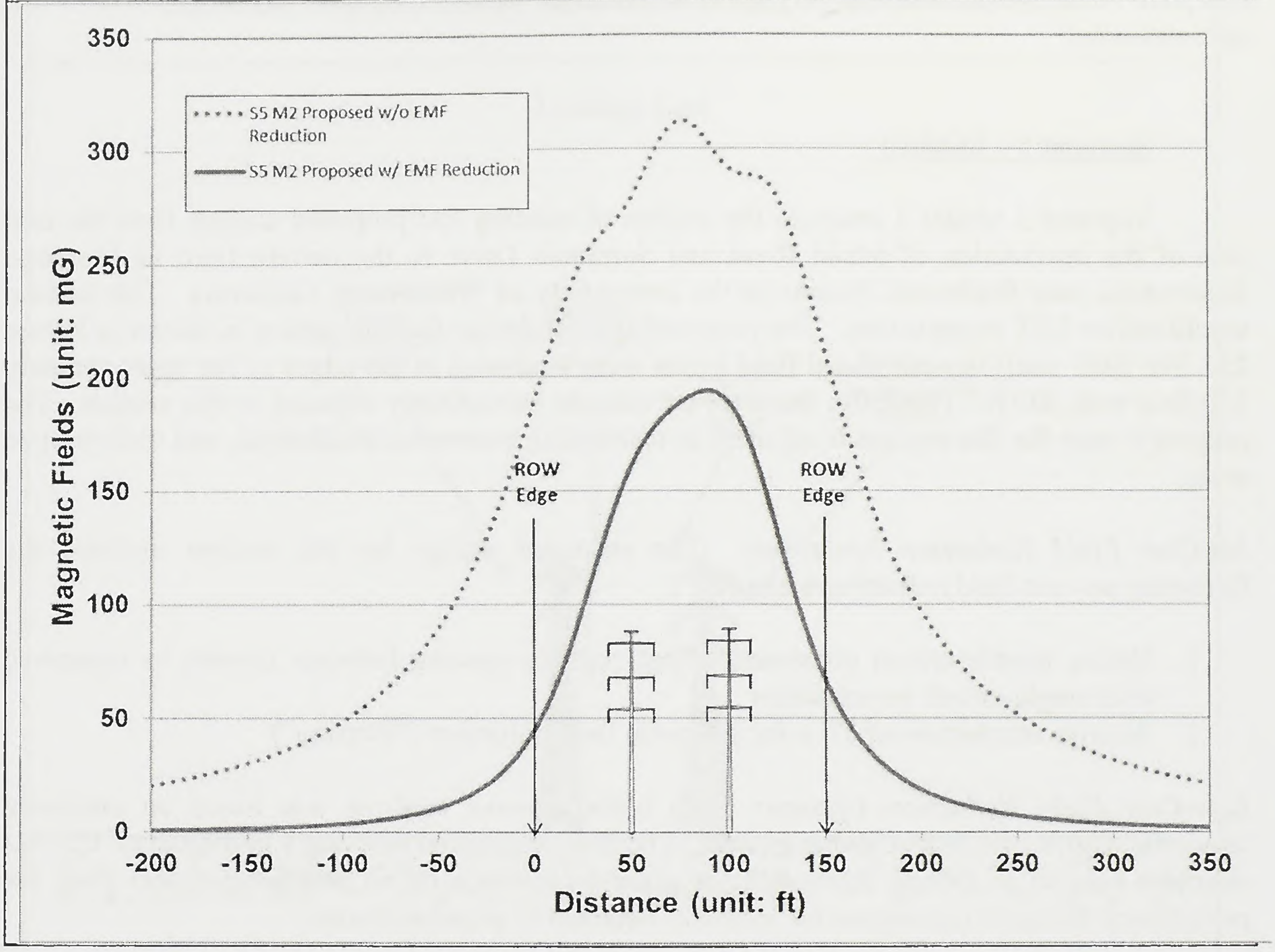


Table 13. Calculated Magnetic Field Levels[88] for Segment 5 Model 2

Design Options	North Edge of ROW (mG)	% Reduction[89]	South Edge of ROW (mG)	% Reduction
Proposed w/o EMF Reduction	190.5	-	211.2	-
Proposed w/ Phasing	45.0	76.4	67.4	68.1

---

[87] This figure shows calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

[88] This table lists calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

[89] "% Reduction" represents the percentage of reduction achieved with the implementation of the referenced no-cost and/or low-cost magnetic field reduction measures as compared to the proposed design in the previous row in this table.

Recommendations for Segment 5 Model 2: *Because the proposed design already includes no-cost field reduction measures in the preliminary design, no low-cost field reduction measures are recommended.*

Segment 5 – Model 3

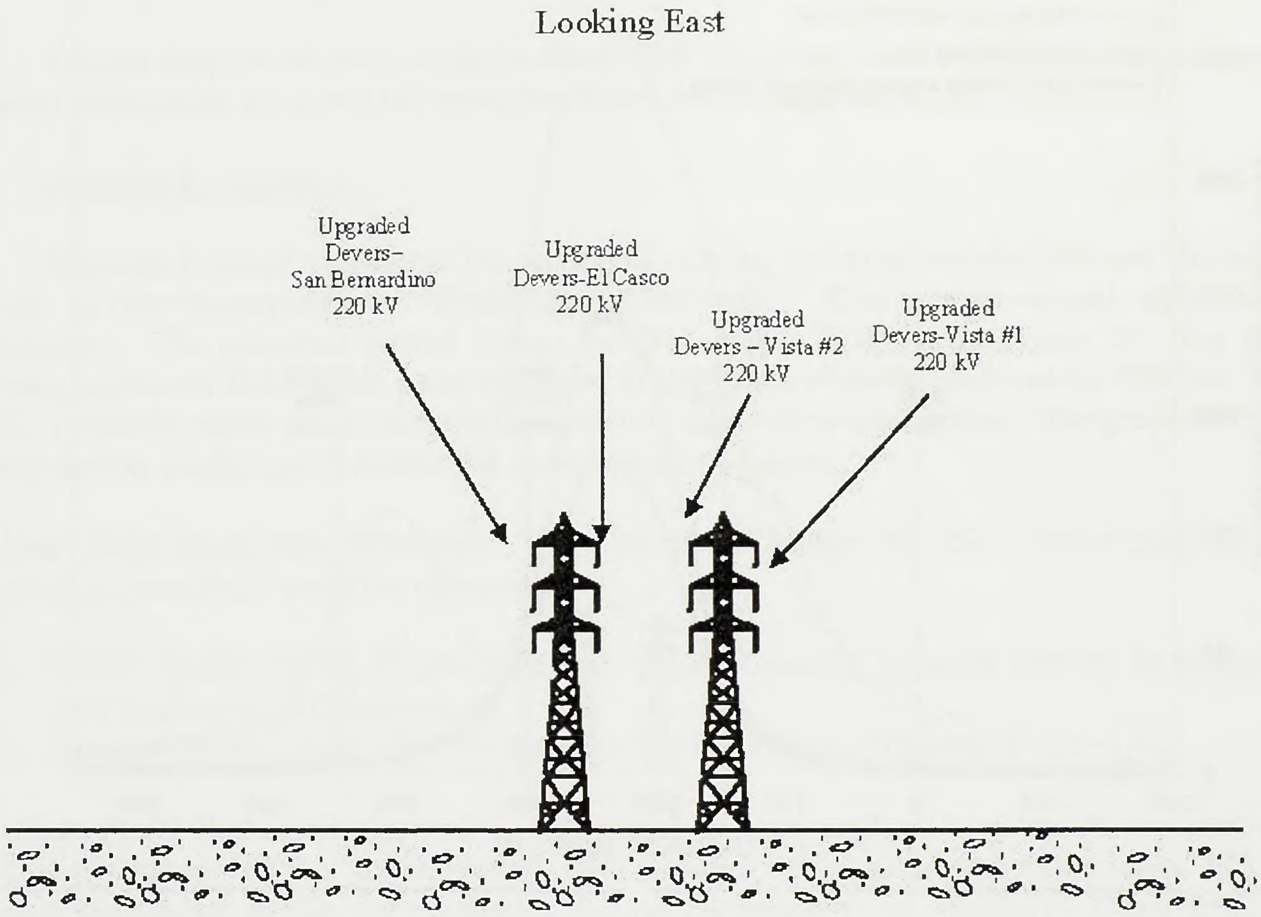
Segment 5 Model 3 analyzes the section of existing and proposed designs from the east side of the intersection of Malki Road and Seminole Drive to the eastern limit of Morongo Reservation near Rushmore Avenue in the community of Whitewater, California. This section would utilize LST construction. The proposed typical design for this section is shown in Figure 25. For EMF analysis, calculated field levels were evaluated at the edges of the approximately 150-foot wide ROW. Presently, there are no schools immediately adjacent to this section. The proposed route for this section is adjacent to residential, commercial/industrial, and undeveloped areas.

No-Cost Field Reduction Measures: The proposed design for this section includes the following no-cost field reduction measures:

1. Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction
2. Arrange conductors of T/Ls for magnetic field reduction ("Phasing")

Low-Cost Field Reduction Options: The initial no-cost analysis was based on minimum structure heights of 110 feet above ground. The low-cost option of using a minimum of 125 feet structure heights or raising the conductor ground clearance by an additional 8 feet from the preliminary design is considered for locations adjacent to populated areas.

Figure 26. Proposed 220 kV Structures Design - Segment 5 Model 3[90]


Looking East
Upgraded Devers–San Bernardino 220 kV
Upgraded Devers-El Casco 220 kV
Upgraded Devers – Vista #2 220 kV
Upgraded Devers-Vista #1 220 kV

Magnetic Field Calculations: Figure 26 and Table 13 show the calculated magnetic field levels for the proposed design comparing existing and proposed design without and with field reduction measures.

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[90] Figure is not to scale.

Figure 27. Calculated Magnetic Field Levels[91] for Segment 5 Model 3 Proposed 220 kV Line Upgrade (Looking East)

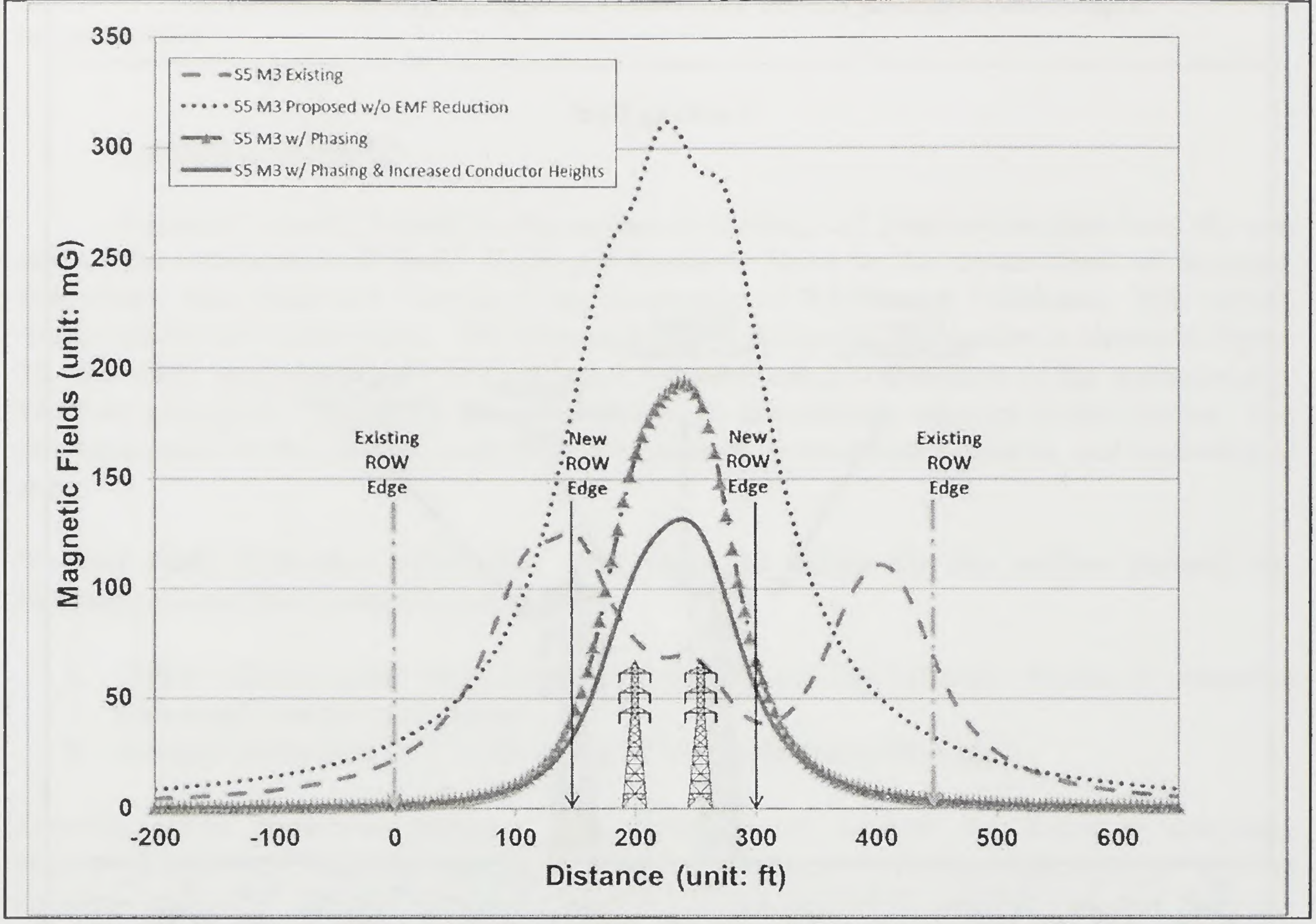


Table 14. Calculated Magnetic Field Levels[92] for Segment 5 Model 3

Design Options	North Edge of ROW (mG)	% Reduction[93]	South Edge of ROW (mG)	% Reduction
Existing	22.3	-	64.1	-
Proposed w/o EMF Reduction	190.5	-	211.2	-
Proposed w/ Phasing	45.0	76.4	67.4	68.1
Proposed w/ Phasing & Increased Conductor Heights	35.5	21.1	53.6	20.5

---

[91] This figure shows calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

[92] This table lists calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

[93] "% Reduction" represents the percentage of reduction achieved with the implementation of the referenced no-cost and/or low-cost magnetic field reduction measures as compared to the proposed design in the previous row in this table.

Recommendations for Segment 5 Model 3: *The low-cost measure of raising structure heights or raising conductor ground clearance is recommended in this section near populated areas.*

Segment 6

For the purpose of EMF analysis, three EMF computer models in populated areas were utilized to determine the best EMF reduction measures for Segment 6.

Segment 6 – Model 1

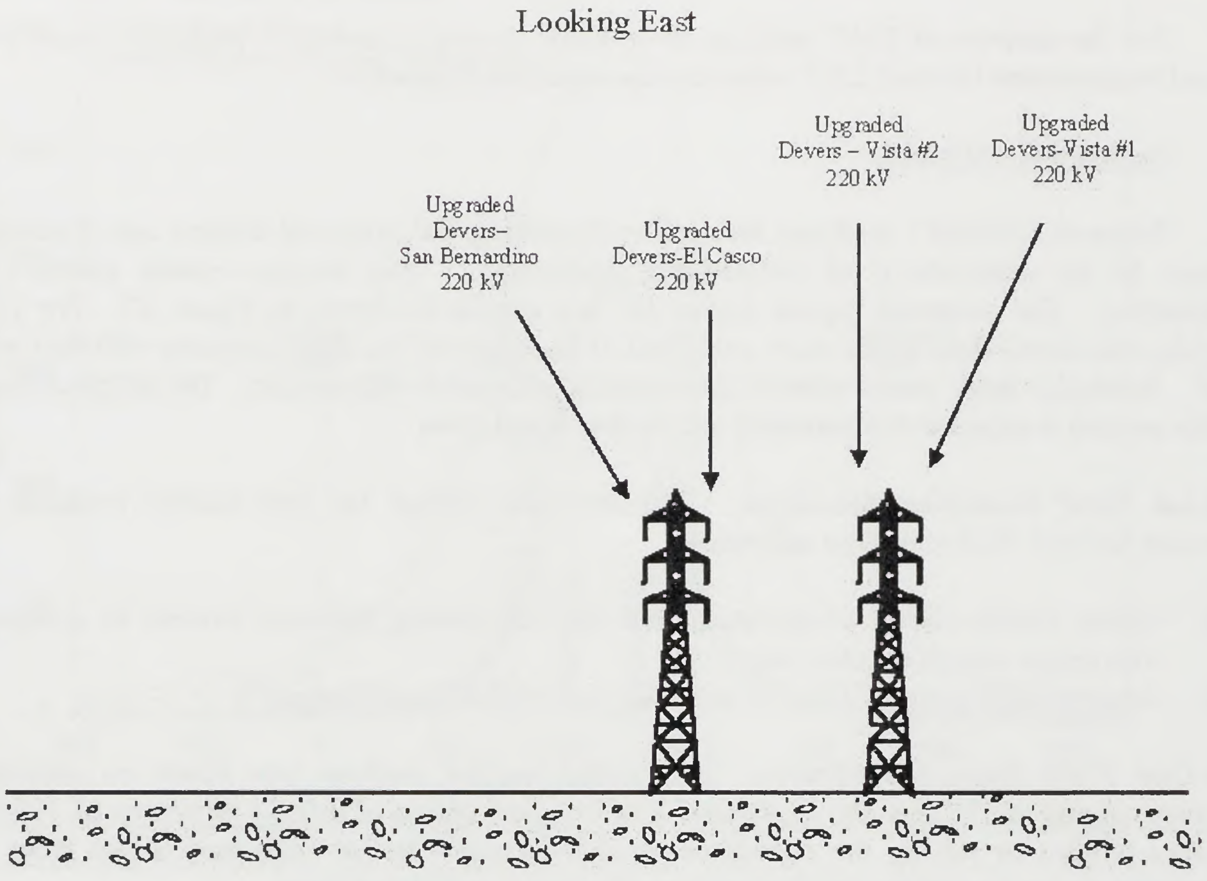
Segment 6 Model 1 analyzes the section of existing and proposed designs near Rushmore Avenue in the community of Whitewater, California. This section would utilize LST construction. The proposed typical design for this section is shown in Figure 27. For EMF analysis, calculated field levels were evaluated at the edges of the approximately 400-foot wide ROW. Presently, there are no schools immediately adjacent to this section. The proposed route for this section is adjacent to residential and undeveloped areas.

No-Cost Field Reduction Measures: The proposed design for this section includes the following no-cost field reduction measures:

1. Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction
2. Arrange conductors of T/Ls for magnetic field reduction ("Phasing")

Low-Cost Field Reduction Options: The initial no-cost analysis was based on minimum structure heights of 110 feet above ground. The low-cost option of using a minimum of 125 feet structure heights or raising the conductor ground clearance by an additional 8 feet from the preliminary design is considered for locations adjacent to populated areas.

Figure 28. Proposed 220 kV Structures Design - Segment 6 Model 1[94]


Looking East
Upgraded Devers– San Bernardino 220 kV
Upgraded Devers-El Casco 220 kV
Upgraded Devers – Vista #2 220 kV
Upgraded Devers-Vista #1 220 kV

Magnetic Field Calculations: Figure 28 and Table 14 show the calculated magnetic field levels for the proposed design comparing existing and proposed design without and with field reduction measures.

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[94] Figure is not to scale.

Figure 29. Calculated Magnetic Field Levels[95] for Segment 6 Model 1 Proposed 220 kV Line Upgrade (Looking East)

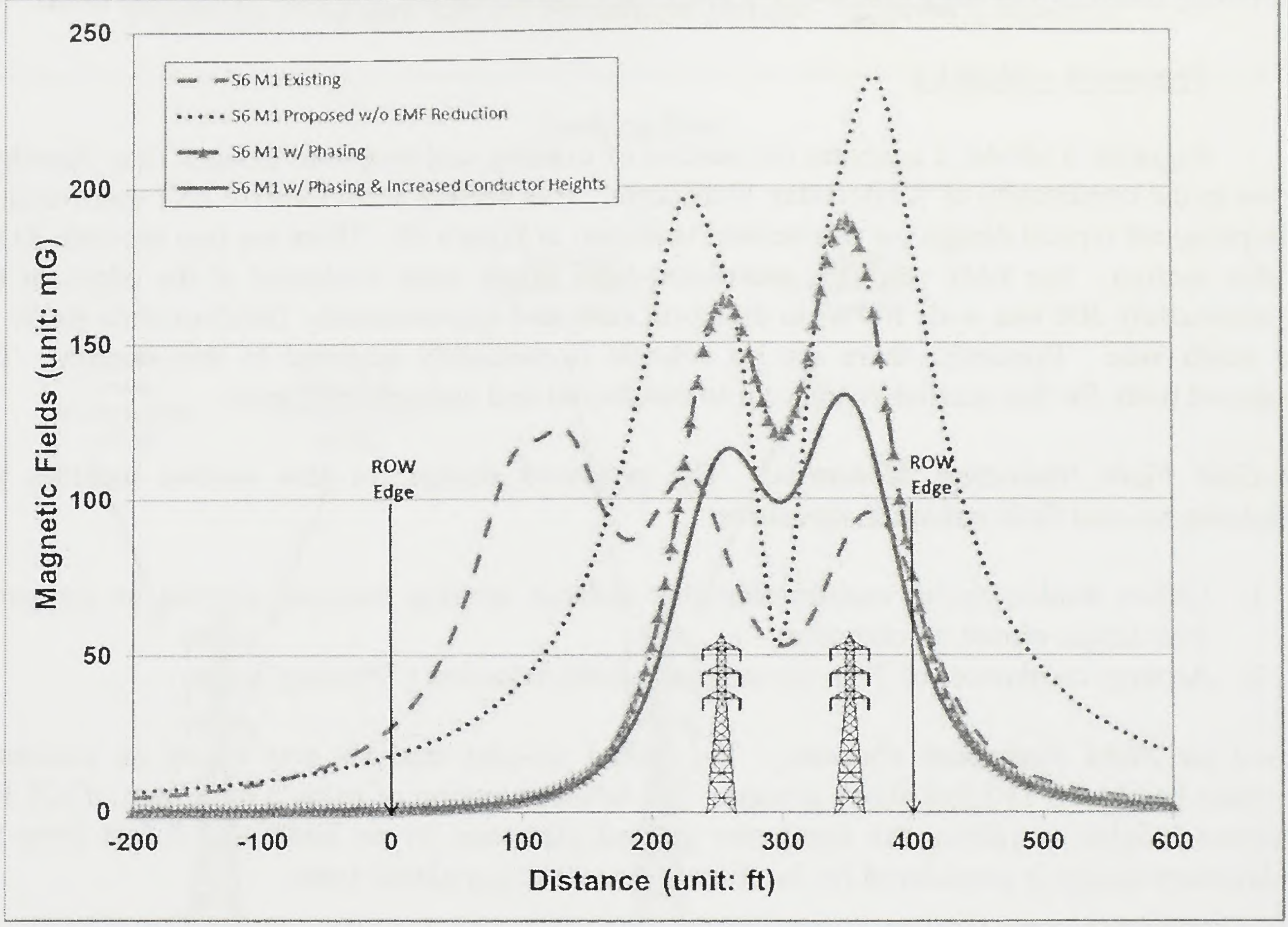


Table 15. Calculated Magnetic Field Levels[96] for Segment 6 Model 1

Design Options	North Edge of North ROW (mG)	% Reduction[97]	South Edge of North ROW (mG)	% Reduction
Existing	27.0	-	72.6	-
Proposed w/o EMF Reduction	18.0	-	180.4	-
Proposed w/ Phasing	0.7	96.1	75.6	58.1
Proposed w/ Phasing & Increased Conductor Heights	0.7	0	60.7	19.7

---

[95] This figure shows calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

[96] This table lists calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

[97] "% Reduction" represents the percentage of reduction achieved with the implementation of the referenced no-cost and/or low-cost magnetic field reduction measures as compared to the proposed design in the previous row in this table.

Recommendations for Segment 6 Model 1: *The low-cost measure of raising structure heights or raising conductor ground clearance is recommended in this section near populated areas.*

Segment 6 – Model 2

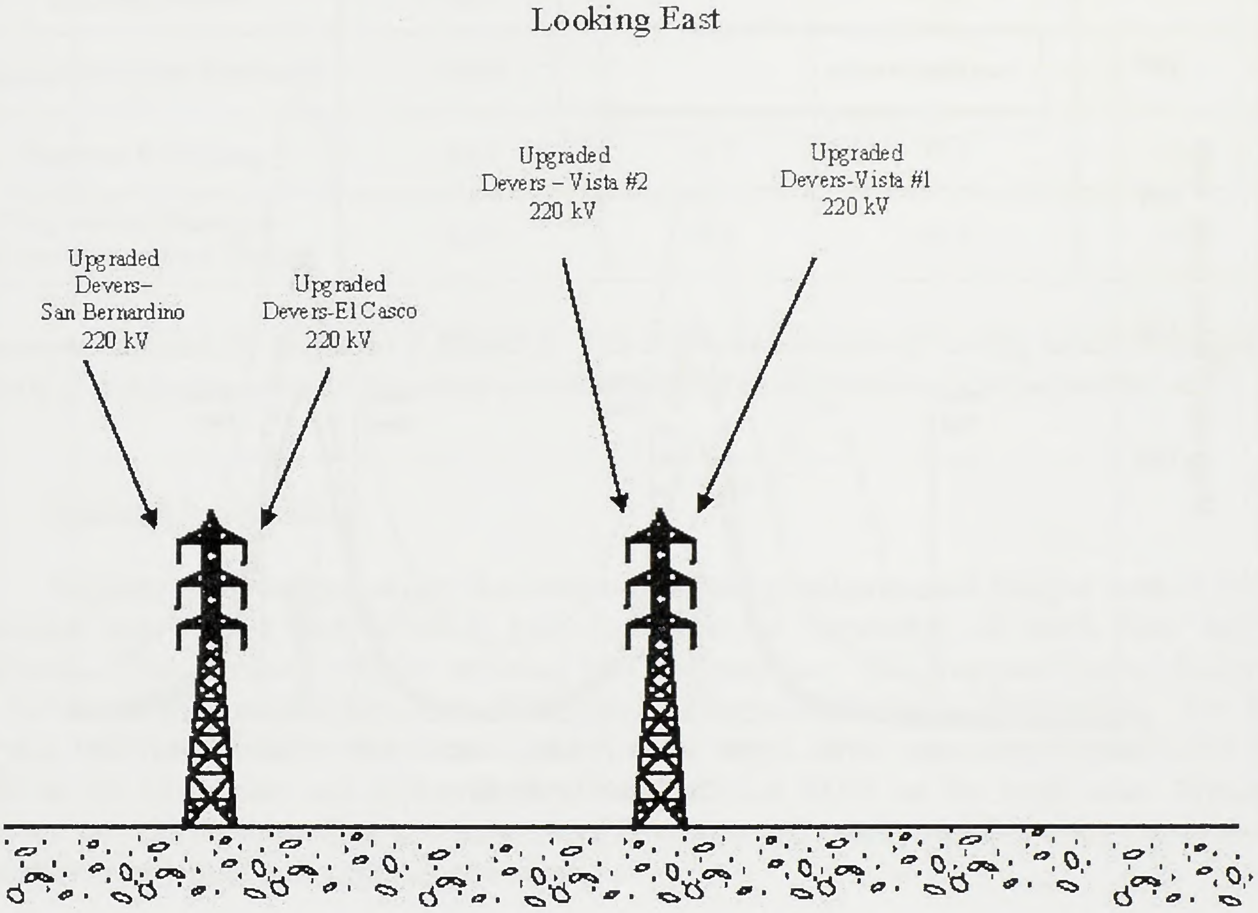
Segment 6 Model 2 analyzes the section of existing and proposed designs near Amethyst Drive in the community of Whitewater, California. This section would utilize LST construction. The proposed typical design for this section is shown in Figure 29. There are two separate ROW in this section. For EMF analysis, calculated field levels were evaluated at the edges of the approximately 300 feet wide ROW on the north side, and approximately 100-foot wide ROW on the south side. Presently, there are no schools immediately adjacent to this section. The proposed route for this section is adjacent to residential and undeveloped areas.

No-Cost Field Reduction Measures: The proposed design for this section includes the following no-cost field reduction measures:

1. Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction
2. Arrange conductors of T/Ls for magnetic field reduction ("Phasing")

Low-Cost Field Reduction Options: The initial no-cost analysis was based on minimum structure heights of 110 feet above ground. The low-cost option of using a minimum of 125 feet structure heights or raising the conductor ground clearance by an additional 8 feet from the preliminary design is considered for locations adjacent to populated areas.

Figure 30. Proposed 220 kV Structures Design - Segment 6 Model 2[98]


Looking East
Upgraded Devers– San Bernardino 220 kV
Upgraded Devers-El Casco 220 kV
Upgraded Devers – Vista #2 220 kV
Upgraded Devers-Vista #1 220 kV

Magnetic Field Calculations: Figure 30 and Table 15 show the calculated magnetic field levels for the proposed design comparing existing and proposed design without and with field reduction measures.

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[98] Figure is not to scale.

Figure 31. Calculated Magnetic Field Levels[99] for Segment 6 Model 2 Proposed 220 kV Line Upgrade (Looking East)

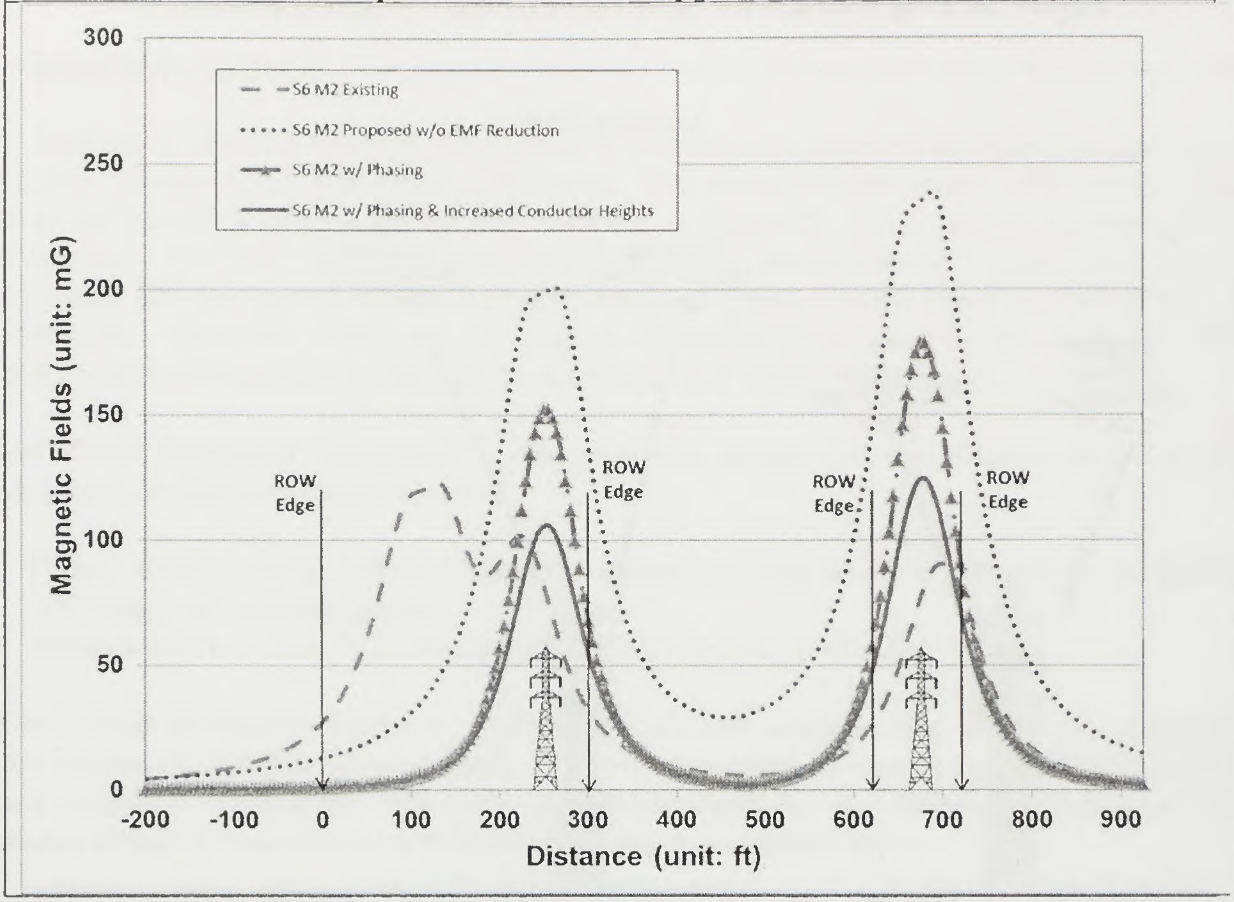


Table 16. Calculated Magnetic Field Levels[100] for Segment 6 Model 2				
Design Options	North Edge of North ROW (mG)	% Reduction[101]	South Edge of North ROW (mG)	% Reduction
Existing (North)	27.3	-	31.9	-
Proposed w/o EMF Reduction	13.0	-	137.2	-
Proposed w/ Phasing	0.9	93.1	67.9	50.5
Proposed w/ Phasing &	0.9	0	54.8	19.3

---

[99] This figure shows calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

[100] This table lists calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

[101] "% Reduction" represents the percentage of reduction achieved with the implementation of the referenced no-cost and/or low-cost magnetic field reduction measures as compared to the proposed design in the previous row in this table.

Increased Conductor Heights				

Design Options	North Edge of South ROW (mG)	% Reduction	South Edge of South ROW (mG)	% Reduction
Existing (South)	28.4	-	75.3	-
Proposed w/o EMF Reduction	156.2	-	164.0	-
Proposed w/ Phasing	66.8	57.2	79.3	51.6
Proposed w/ Phasing & Increased Conductor Heights	53.9	19.3	63.9	19.4

Recommendations for Segment 6 Model 2: *The low-cost measure of raising structure heights or raising conductor ground clearance is recommended in this section near populated areas.*

Segment 6 – Model 3

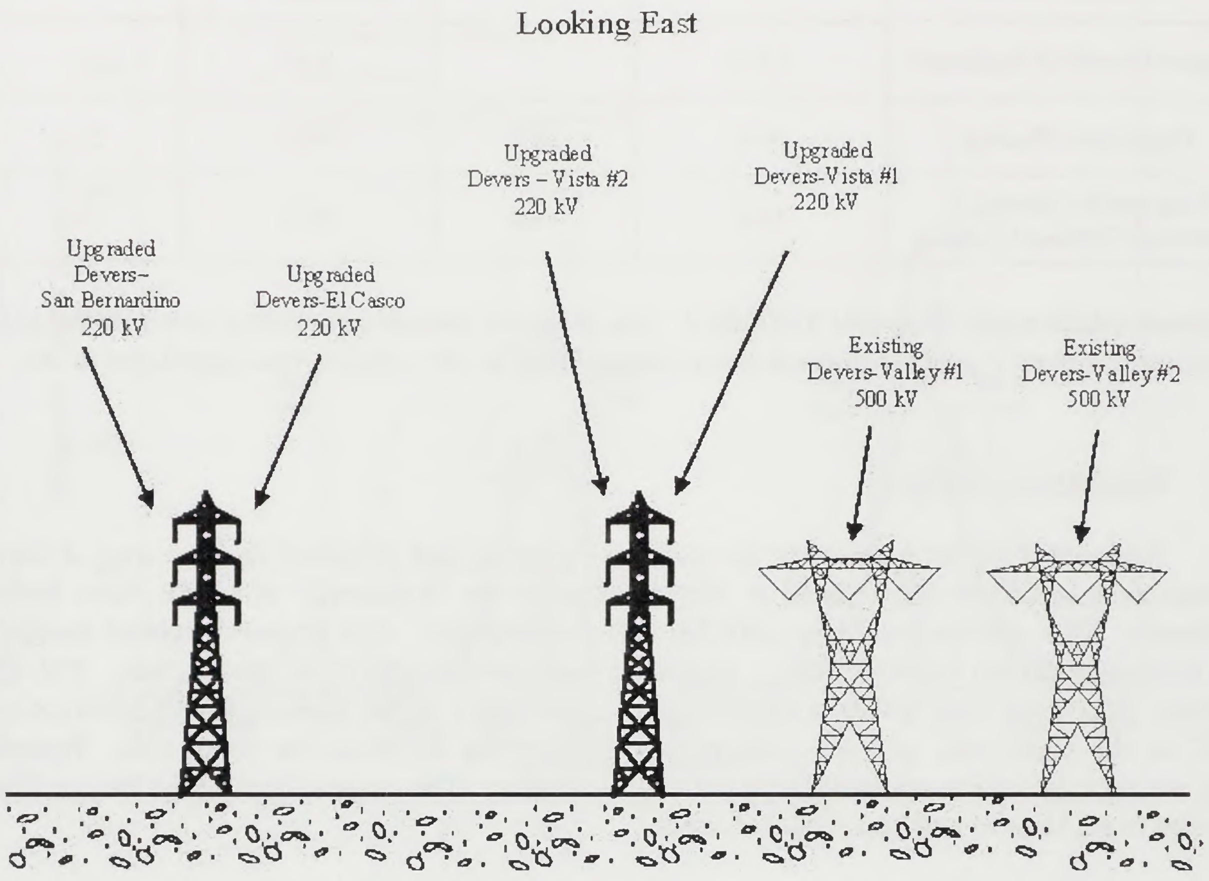
Segment 6 Model 3 analyzes the section of existing and proposed designs west of Devers Substation near Desert View Road & 16th Avenue in the community of North Palm Springs, California. This section would be utilizing LST construction. The proposed typical design for this section is shown in Figure 31. There are two separate ROW in this section. For EMF analysis, calculated field levels were evaluated at the edges of the approximately 300-foot wide ROW on the north side, and approximately 415-foot wide ROW on the south side. Presently, there are no schools immediately adjacent to this section. The proposed route for this section is adjacent to residential and undeveloped areas.

No-Cost Field Reduction Measures: The proposed design for this section includes the following no-cost field reduction measures:

1. Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction
2. Arrange conductors of T/Ls for magnetic field reduction ("Phasing")

Low-Cost Field Reduction Options: The initial no-cost analysis was based on minimum structure heights of 110 feet above ground. The low-cost option of using a minimum of 125 feet structure heights or raising the conductor ground clearance by an additional 8 feet from the preliminary design is considered for locations adjacent to populated areas.

Figure 32. Proposed 220 kV Structures Design - Segment 6 Model 3[102]


Looking East
Upgraded Devers– San Bernardino 220 kV
Upgraded Devers-El Casco 220 kV
Upgraded Devers – Vista #2 220 kV
Upgraded Devers-Vista #1 220 kV
Existing Devers-Valley #1 500 kV
Existing Devers-Valley #2 500 kV

Magnetic Field Calculations: Figure 32 and Table 16 show the calculated magnetic field levels for the proposed design comparing existing and proposed design without and with field reduction measures.

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[102] Figure is not to scale.

Figure 33. Calculated Magnetic Field Levels[103] for Segment 6 Model 3 Proposed 220 kV Line Upgrade (Looking East)

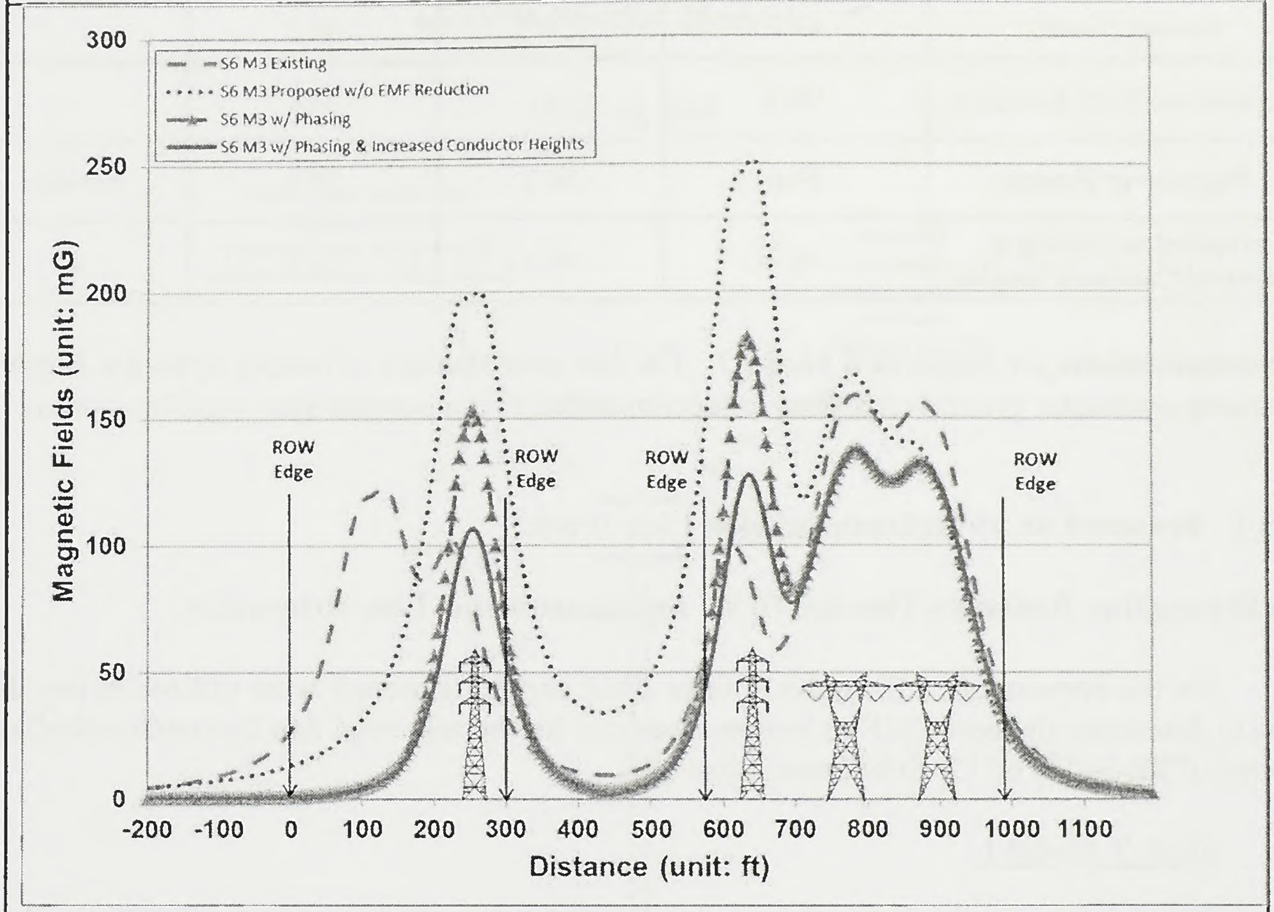


Table 17. Calculated Magnetic Field Levels[104] for Segment 6 Model 3

Design Options	North Edge of North ROW (mG)	% Reduction[105]	South Edge of North ROW (mG)	% Reduction
Existing (North)	27.2	-	32.4	-
Proposed w/o EMF Reduction	13.3	-	135.5	-
Proposed w/ Phasing	0.8	94.0	67.5	50.2
Proposed w/ Phasing & Increased Conductor Heights	0.8	0	54.4	19.4

---

[103] This figure shows calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

[104] This table lists calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

[105] "% Reduction" represents the percentage of reduction achieved with the implementation of the referenced no-cost and/or low-cost magnetic field reduction measures as compared to the proposed design in the previous row in this table.

Design Options	North Edge of South ROW (mG)	% Reduction	South Edge of South ROW (mG)	% Reduction
Existing (South)	67.2	-	35.2	-
Proposed w/o EMF Reduction	162.0	-	23.6	-
Proposed w/ Phasing	63.6	60.7	29.3	Increase
Proposed w/ Phasing & Increased Conductor Heights	50.7	20.3	29.3	0

Recommendations for Segment 6 Model 3: *The low-cost measure of raising structure heights or raising conductor ground clearance is recommended in this section near populated areas.*

Part 3 - Proposed 66 kV Subtransmission Line Work

San Bernardino-Redlands-Timoteo 66 kV Subtransmission Line Relocation

For the purpose of EMF analysis, three EMF computer models were utilized in populated areas to determine the best EMF reduction measures for the relocated San Bernardino-Redlands-Timoteo ("SB-R-T") 66 kV Subtransmission Line.

SB-R-T Model 1

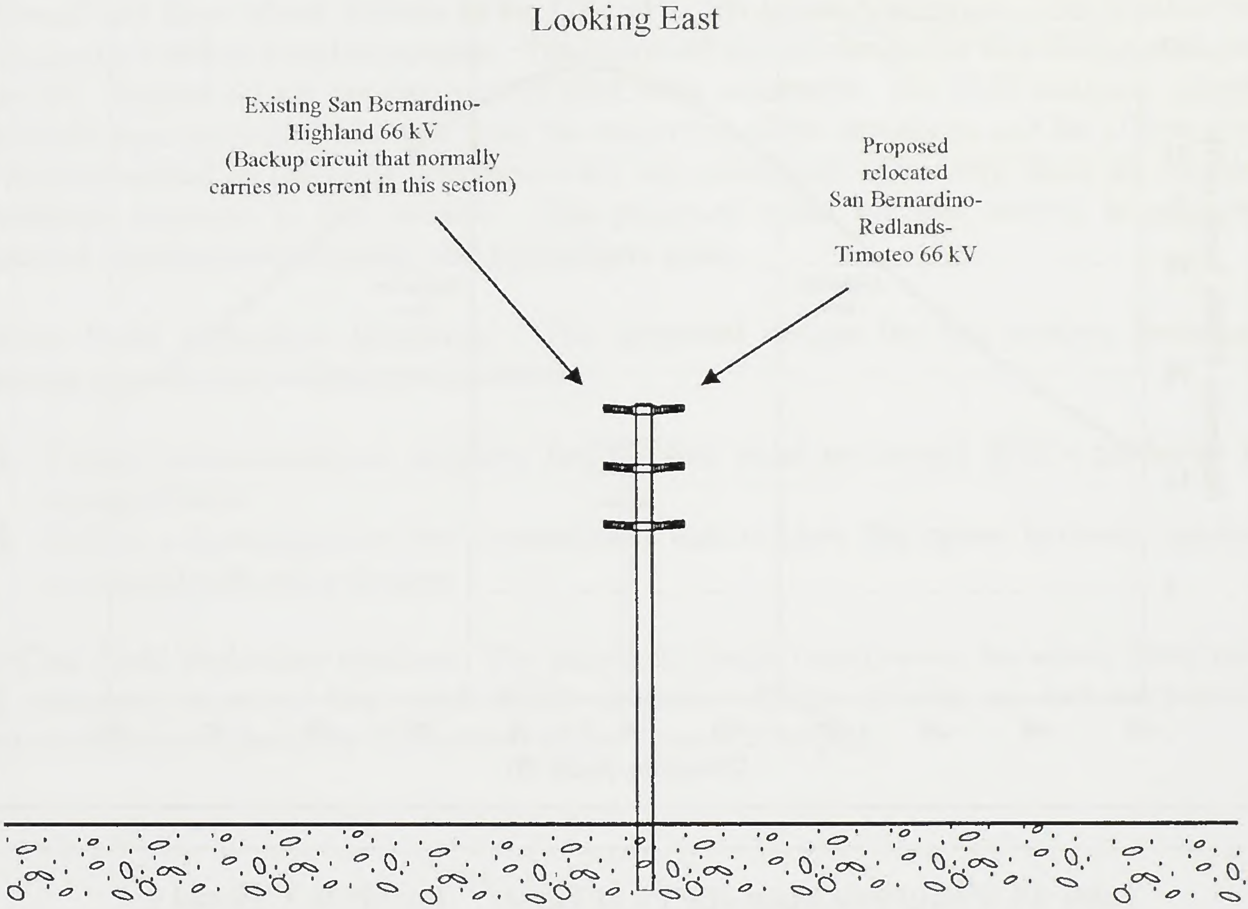
SB-R-T Model 1 analyzes the typical cross section of on San Bernardino Avenue between San Bernardino Substation and Marigold Avenue in the City of Redlands, California. This section would utilize mostly light weight steel (LWS) or wood structures. The proposed typical design for this section is shown in Figure 33. This section of the circuit would be built to 115 kV design specifications. Typical 115 kV circuits have 30-foot wide easements. For EMF analysis, calculated field levels were evaluated 15 feet from the centerline of the structures. Presently, there are no schools immediately adjacent to this section. The proposed route for this section is adjacent to commercial/industrial area.

No-Cost Field Reduction Measures: The proposed design for this section includes the following no-cost field reduction measures:

1. Utilize subtransmission structure heights that meet or exceed SCE's preferred EMF design criteria
2. Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction

Low-Cost Field Reduction Options: The proposed design incorporates the above listed no-cost field reduction measures that meet SCE's preferred design criteria; no low-cost reduction measures such as utilizing taller structures were considered for this section of the Proposed Project.

Figure 34. Proposed 66 kV Structure Design – San Bernardino-Redlands-Timoteo 66 kV Relocation Model 1[106]


Looking East
Existing San Bernardino-Highland 66 kV (Backup circuit that normally carries no current in this section)
Proposed relocated San Bernardino-Redlands-Timoteo 66 kV

Magnetic Field Calculations: Figure 34 and Table 17 show the calculated magnetic field levels for the proposed design. These calculations were made using the proposed structure with a minimum height of 65 feet (above ground).

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[106] Figure is not to scale.

Figure 35. Calculated Magnetic Field Levels[107] for SB-R-T Model 1 Relocation (on San Bernardino Avenue Looking East)

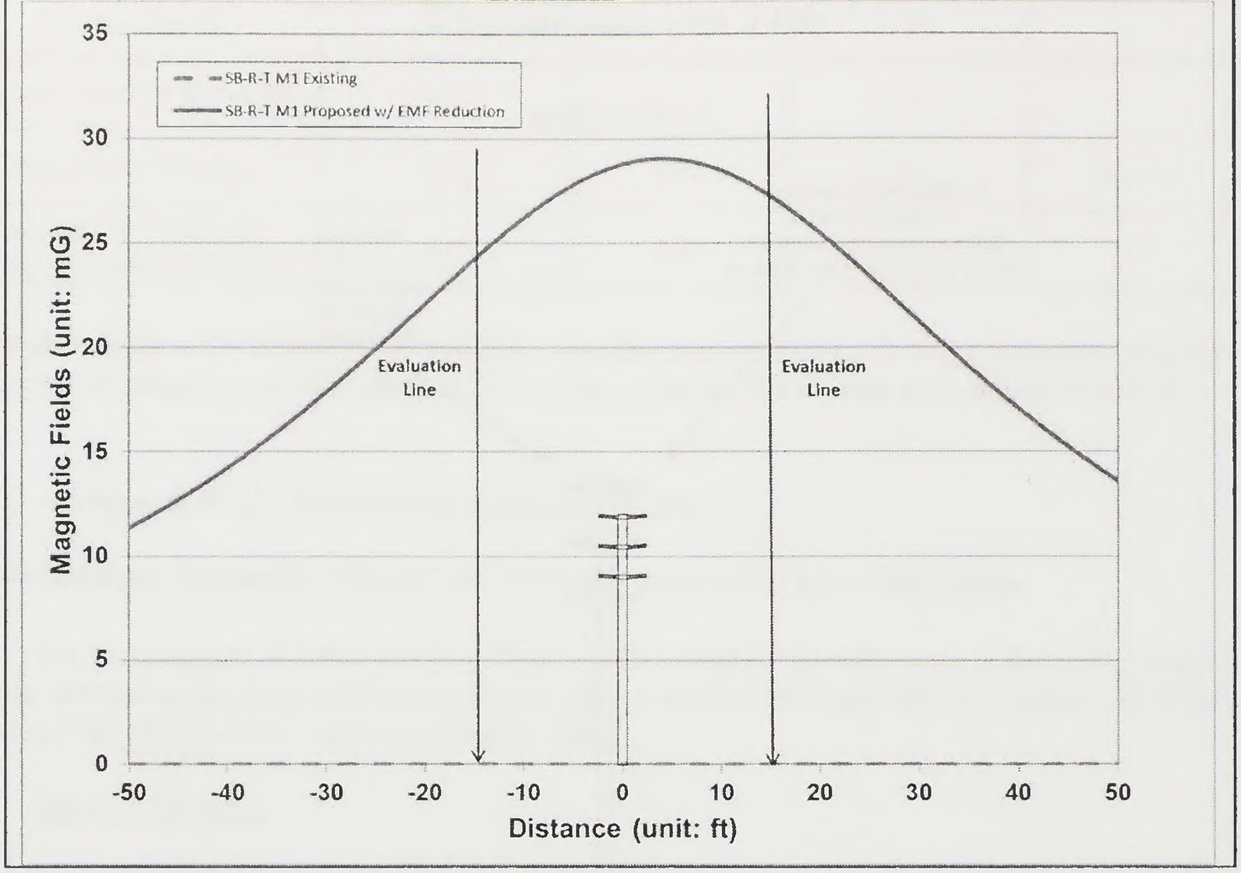


Table 18. Calculated Magnetic Field Levels[108] for SB-R-T Model 1

Design Options	15 Feet Left of Centerline of structures (mG)	% Reduction	15 Feet Right of Centerline of structures (mG)	% Reduction
Existing (normally no current)	0	-	0	-
Proposed	24.3	-	27.2	-

Recommendations for SB-R-T Model 1: *Because the proposed design already includes no-cost field reduction measures including structural heights that met the SCE EMF preferred design criteria in the preliminary design, no low-cost field reduction measures such as utilizing taller structures are recommended.*

---

[107] This figure shows calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

[108] This table lists calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

SB-R-T Model 2

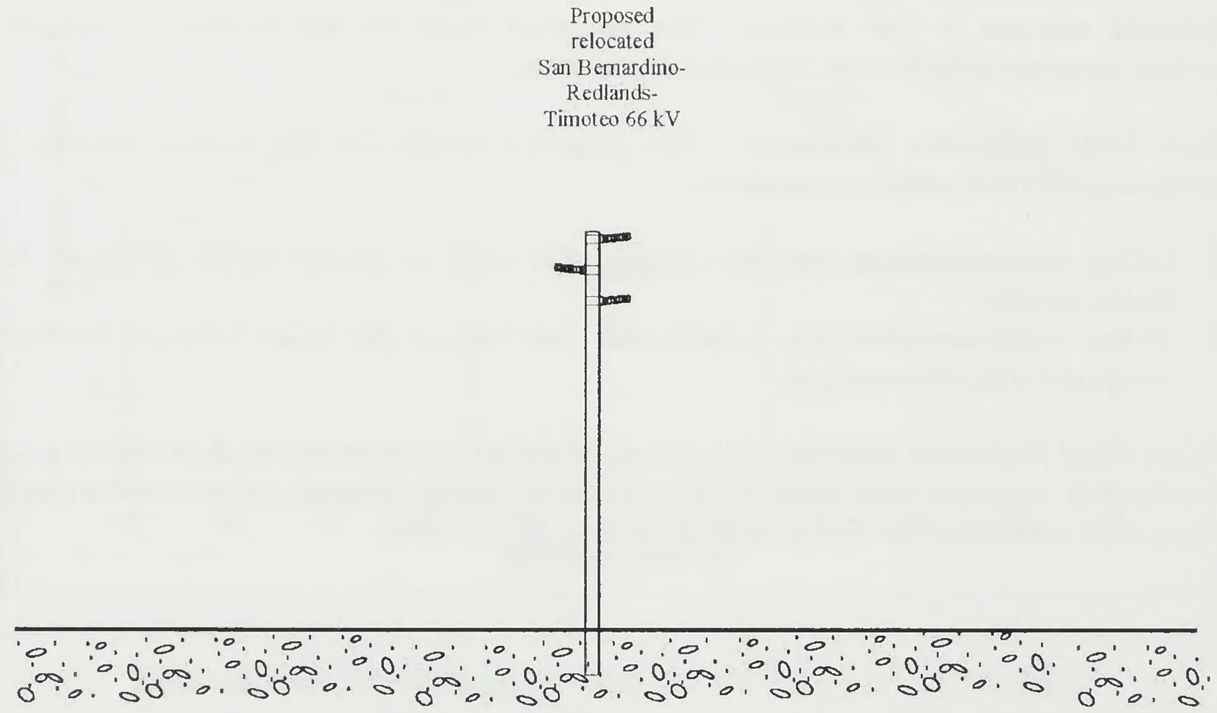
SB-R-T Model 2 analyzes the typical design where the San Bernardino-Redlands-Timoteo 66 kV line is an overhead single circuit from the intersection of San Bernardino Avenue and Marigold Avenue in the City of Redlands to near the intersection of West Redlands Boulevard and Bryn Mawr Avenue in the City of Loma Linda, California. This section would utilize mostly LWS or wood structures. The proposed typical design for this section is shown in Figure 35. Typical 66 kV circuits have 25-foot wide easements. For EMF analysis, calculated field levels were evaluated 12.5 feet from the centerline of the structures, and the effects for any distribution located on the same structures were not considered. Presently, there are no schools immediately adjacent to this section. The proposed route for this section is adjacent to residential, commercial/industrial, and agricultural areas.

No-Cost Field Reduction Measures: The proposed design for this section includes the following no-cost field reduction measures:

1. Utilize subtransmission structure heights that meet or exceed SCE's preferred EMF design criteria
2. Utilize subtransmission line construction that reduces the space between conductors compared with other designs

Low-Cost Field Reduction Options: The proposed design incorporates the above listed no-cost field reduction measures that meet SCE's preferred design criteria; no low-cost reduction measures were considered for this section of the Proposed Project.

Figure 36. Proposed 66 kV Structures Design – San Bernardino-Redlands-Timoteo 66 kV Relocation Model 2[109]



Magnetic Field Calculations: Figure 36 and Table 18 show the calculated magnetic field levels for the proposed design. These calculations were made using the proposed structure with a minimum height of 60 feet (above ground).

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[109] Figure is not to scale.

Figure 37. Calculated Magnetic Field Levels[110] for SB-R-T Model 2 Relocation (Overhead)

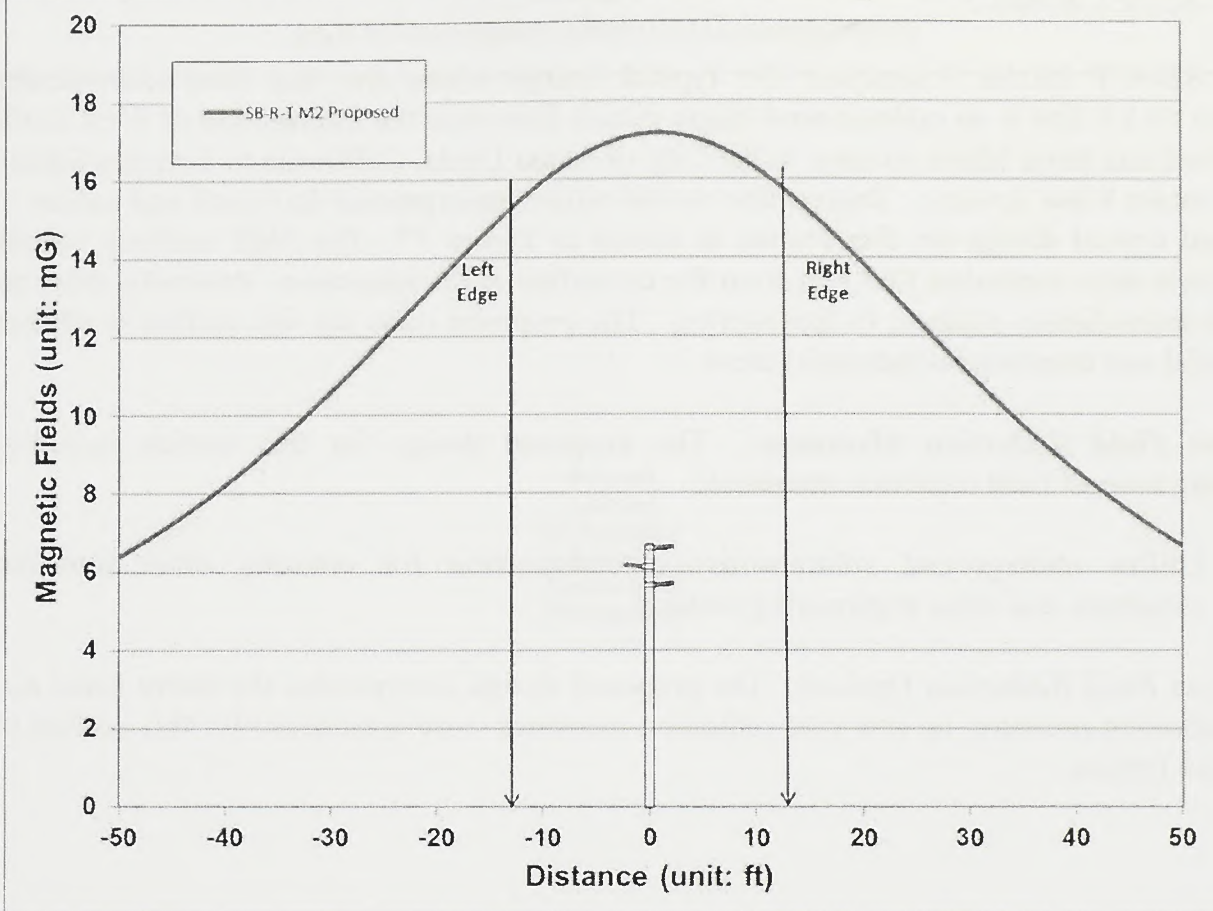

Table 19. Calculated Magnetic Field Levels[111] for SB-R-T Model 2				
Design Options	12.5 Feet Left of Centerline of structures (mG)	% Reduction	12.5 Feet Right of Centerline of structures (mG)	% Reduction
Proposed	15.4	-	15.8	-

Recommendations for SB-R-T Model 2: *Because the proposed design already includes no-cost field reduction measures including structural heights that met the SCE EMF preferred design criteria in the preliminary design, no low-cost field reduction measures such as utilizing taller structures are recommended.*

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[110] This figure shows calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

[111] This table lists calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

SB-R-T Model 3

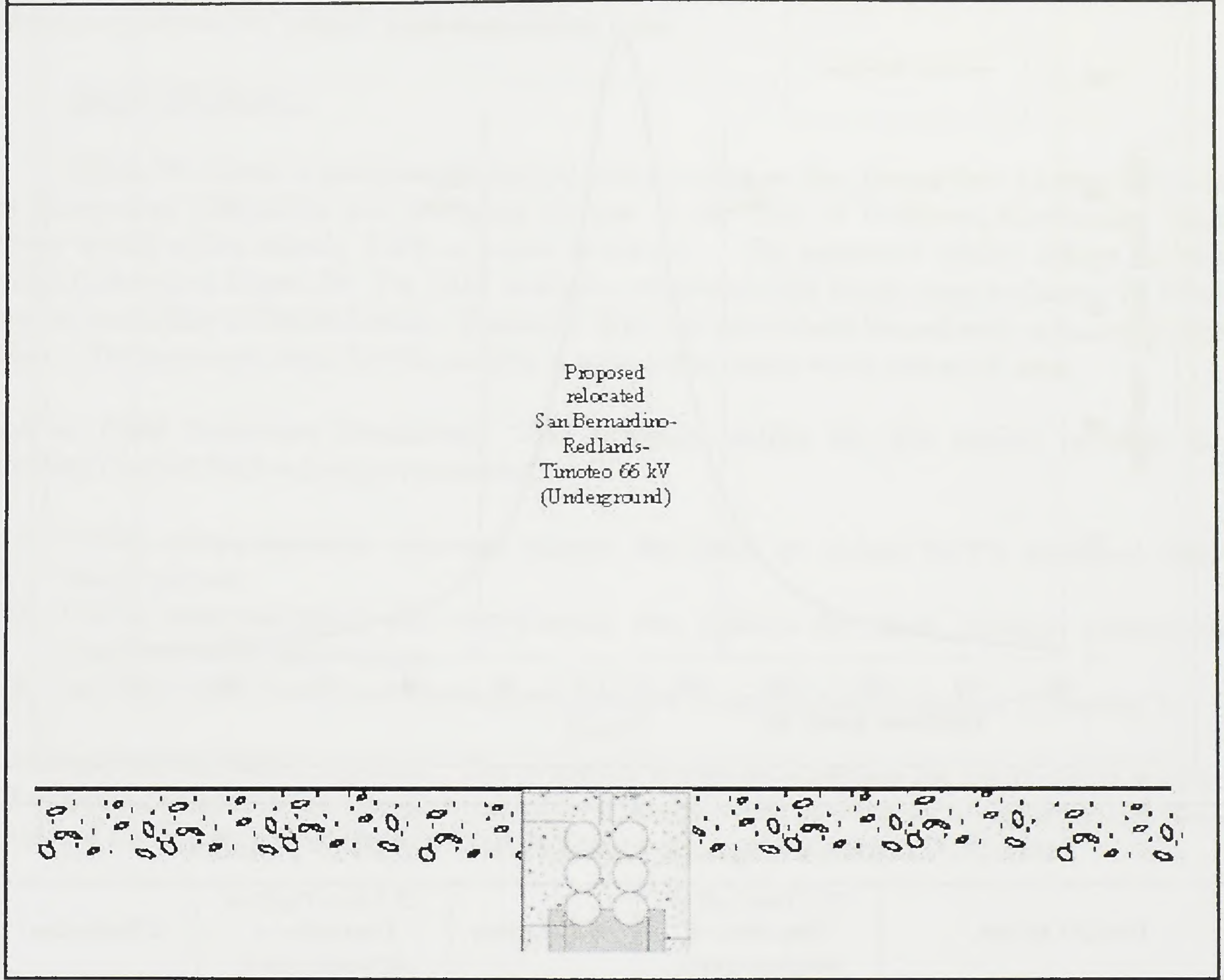
SB-R-T Model 3 analyzes the typical design where the San Bernardino-Redlands-Timoteo 66 kV line is an underground single circuit from near the intersection of West Redlands Boulevard and Bryn Mawr Avenue in the City of Loma Linda, California to Timoteo Substation on Mountain View Avenue. This section would utilize underground duct bank and cables. The proposed typical design for this section is shown in Figure 37. For EMF analysis, calculated field levels were evaluated 12.5 feet from the centerline of the structures. Presently, there are no schools immediately adjacent to this section. The proposed route for this section is adjacent to residential and commercial/industrial areas.

No-Cost Field Reduction Measures: The proposed design for this section includes the following no-cost field reduction measures:

1. Utilize underground subtransmission construction for crossing other transmission structures and other engineering reasons

Low-Cost Field Reduction Options: The proposed design incorporates the above listed no-cost field reduction measure; no low-cost reduction measures were considered for this section of the Proposed Project.

Figure 38. Proposed 66 kV Structures Design – San Bernardino-Redlands-Timoteo 66 kV Relocation Model 3 (Underground)[112]



Magnetic Field Calculations: Figure 38 and Table 19 show the calculated magnetic field levels for the proposed design. These calculations were made using the proposed duct bank with a minimum depth of 36 inches below grade.

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[112] Figure is not to scale.

Figure 39. Calculated Magnetic Field Levels[113] for SB-R-T Model 3 Proposed Relocation (Underground)

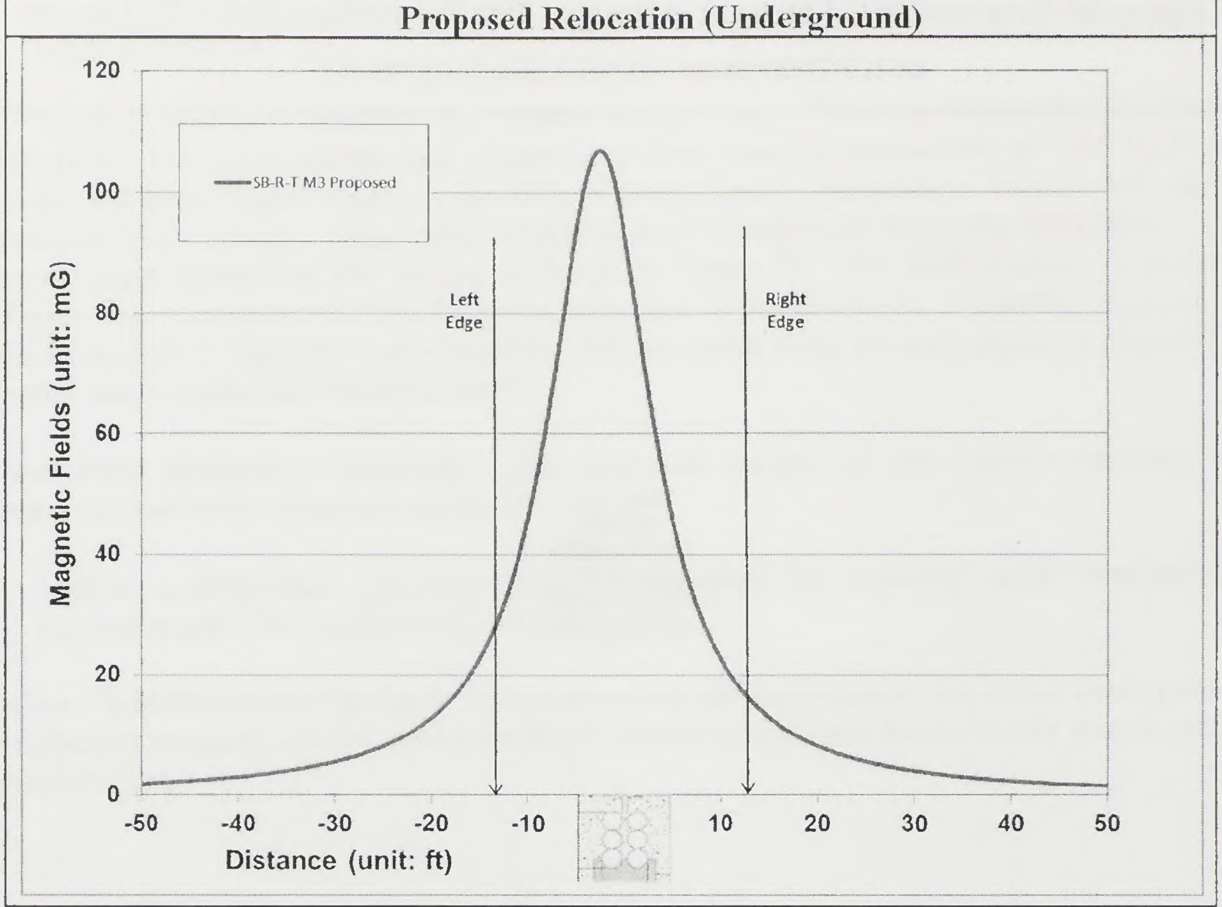


Table 20. Calculated Magnetic Field Levels[114] for SB-R-T Model 3

Design Options	12.5 Feet Left of Centerline of structures (mG)	% Reduction	12.5 Feet Right of Centerline of structures (mG)	% Reduction
Proposed	24.6	-	13.1	-

Recommendations for SB-R-T Model 3: *Because the proposed design already includes no-cost field reduction measure in the preliminary design, no low-cost field reduction measures are recommended.*

---

[113] This figure shows calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

[114] This table lists calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

San Bernardino-Redlands-Tennessee 66 kV Subtransmission Line Relocation

For the purpose of EMF analysis, three EMF computer models were utilized in populated areas to determine the best EMF reduction measures for the relocated San Bernardino-Redlands-Tennessee ("SB-R-TN") 66 kV Subtransmission Line.

SB-R-TN Model 1

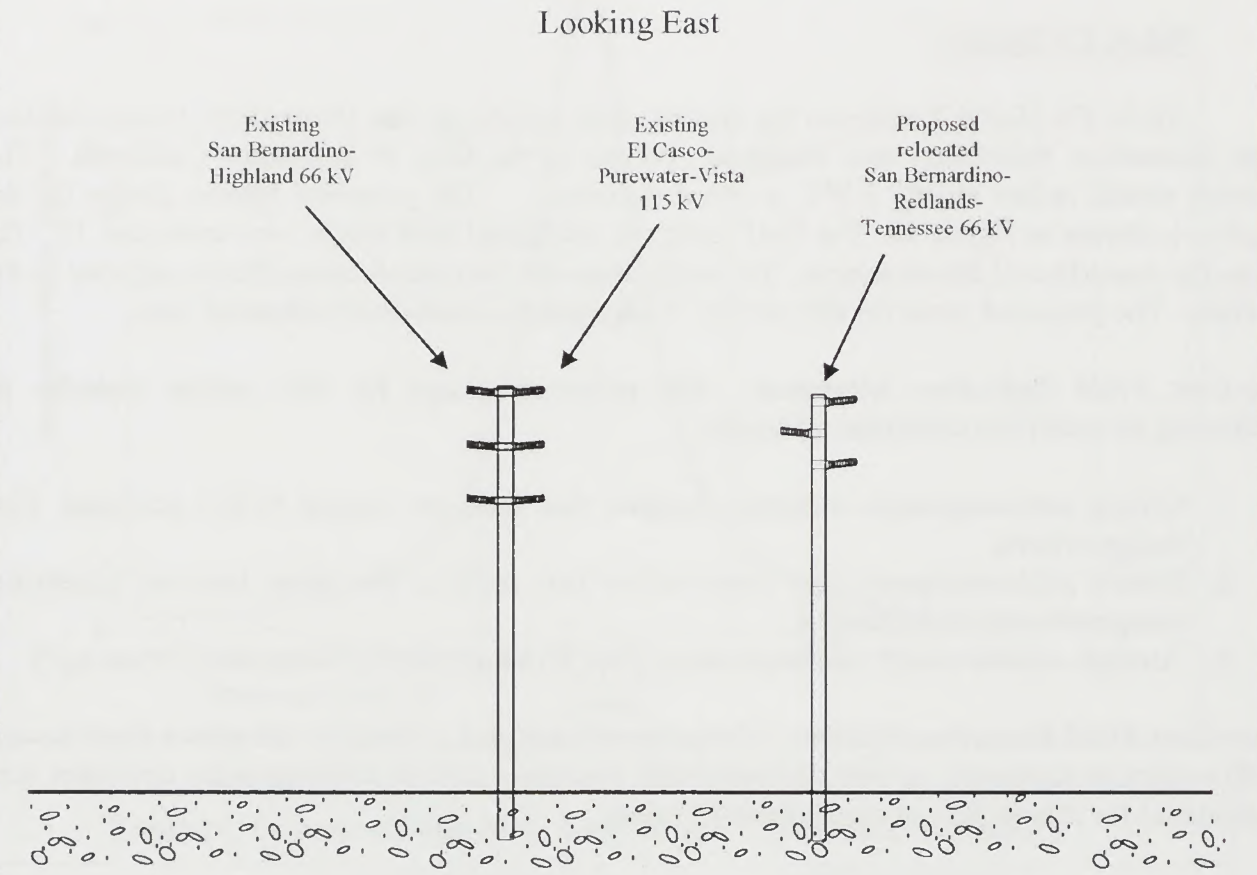
SB-R-TN Model 1 analyzes the typical cross section on San Bernardino Avenue between San Bernardino Substation and Marigold Avenue in the City of Redlands, California. This section would utilize mostly LWS or wood structures. The proposed typical design for this section is shown in Figure 39. For EMF analysis, calculated field levels were evaluated 12.5 feet from the centerline of the structures. Presently, there are no schools immediately adjacent to this section. The proposed route for this section is adjacent to commercial/industrial area.

No-Cost Field Reduction Measures: The proposed design for this section includes the following no-cost field reduction measures:

1. Utilize subtransmission structure heights that meet or exceed SCE's preferred EMF design criteria
2. Utilize subtransmission line construction that reduces the space between conductors compared with other designs
3. Arrange conductors of subtransmission lines for magnetic field reduction ("Phasing")

Low-Cost Field Reduction Options: The proposed design incorporates the above listed no-cost field reduction measures; no low-cost reduction measures such as utilizing taller structures were considered for this section of the Proposed Project.

Figure 40. Proposed 66 kV Structures Design – San Bernardino-Redlands-Tennessee 66 kV Relocation Model 1[115]


Looking East
Existing San Bernardino-Highland 66 kV
Existing El Casco-Purewater-Vista 115 kV
Proposed relocated San Bernardino-Redlands-Tennessee 66 kV

Magnetic Field Calculations: Figure 40 and Table 20 show the calculated magnetic field levels for the proposed design comparing existing, and proposed design without and with arranging conductors for field reduction. These calculations were made using the proposed structure with a minimum height of 60 feet (above ground).

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[115] Figure is not to scale.

Figure 41. Calculated Magnetic Field Levels[116] for SB-R-TN Model 1 Relocation (on San Bernardino Avenue Looking East)

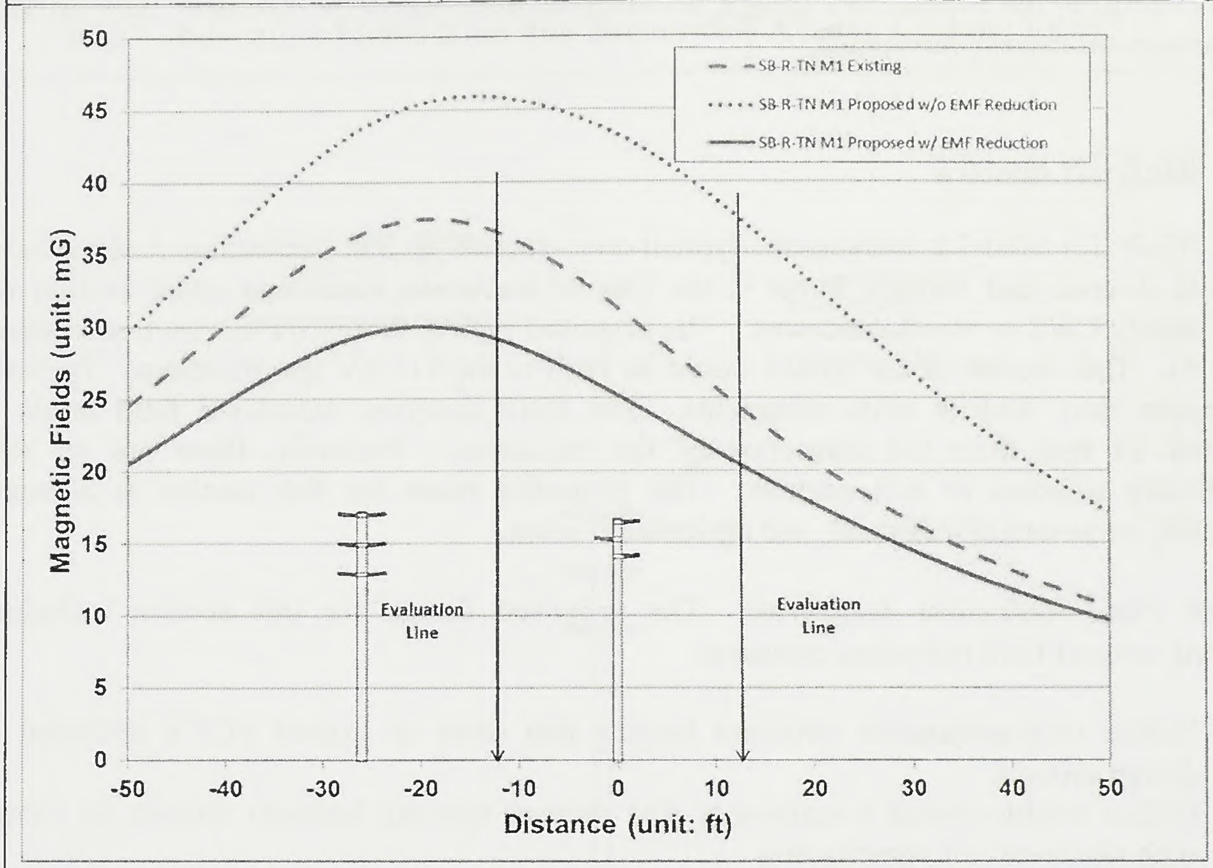

Table 21. Calculated Magnetic Field Levels[117] for SB-R-TN Model 1

Design Options	12.5 Feet Left of Centerline of structures (mG)	% Reduction[118]	12.5 Feet Right of Centerline of structures (mG)	% Reduction
Existing	36.6	-	24.4	
Proposed w/o Phasing	45.9	-	37.4	-
Proposed w/ Phasing	29.2	36.4	20.5	45.2

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[116] This figure shows calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

[117] This table lists calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

[118] "% Reduction" represents the percentage of reduction achieved with the implementation of the referenced no-cost and/or low-cost magnetic field reduction measures as compared to the proposed design in the previous row in this table.

Recommendations for SB-R-TN Model 1: *Because the proposed design already includes no-cost field reduction measures including structural heights that met the SCE EMF preferred design criteria in the preliminary design, no low-cost field reduction measures such as utilizing taller structures are recommended.*

SB-R-TN Model 2

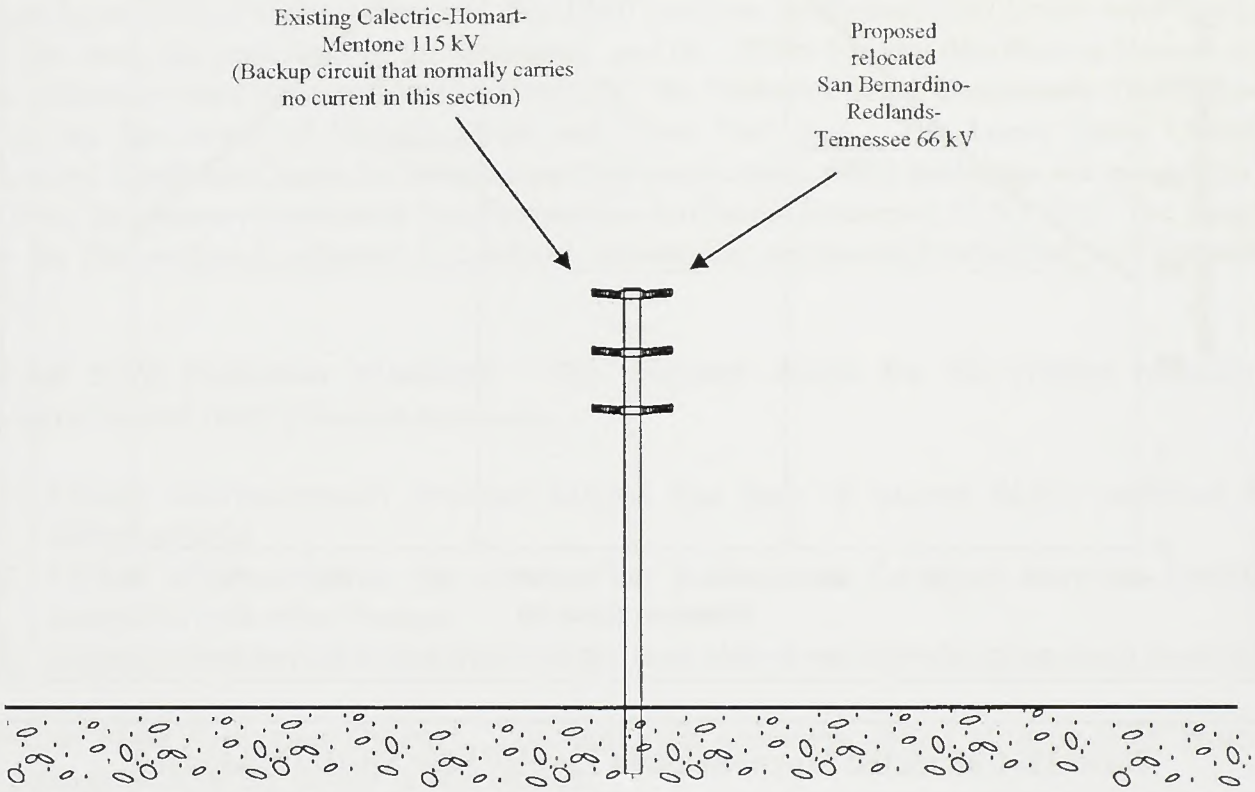
SB-R-TN Model 2 analyzes the typical cross section on San Bernardino Avenue between Marigold Avenue and Nevada Street in the City of Redlands, California. This section would utilize mostly LWS or wood structures. The proposed typical design for this section is shown in Figure 41. This section of the circuit would be built to the 115 kV specifications. Typical 115 kV circuits have 30-foot wide easements. For EMF analysis, calculated field levels were evaluated 15 feet from the centerline of the structures. Presently, there are no schools immediately adjacent to this section. The proposed route for this section is adjacent to residential, commercial/industrial, and agricultural areas.

No-Cost Field Reduction Measures: The proposed design for this section includes the following no-cost field reduction measures:

1. Utilize subtransmission structure heights that meet or exceed SCE's preferred EMF design criteria
2. Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction

Low-Cost Field Reduction Options: The proposed design incorporates the above listed no-cost field reduction measures that meet SCE's preferred design criteria; no low-cost reduction measures such as utilizing taller structures were considered for this section of the Proposed Project.

Figure 42. Proposed 66 kV Structures Design – San Bernardino-Redlands-Tennessee 66 kV Relocation Model 2 (on San Bernardino Avenue Looking East)[119]


Existing Calectric-Homart-Mentone 115 kV (Backup circuit that normally carries no current in this section)
Proposed relocated San Bernardino-Redlands-Tennessee 66 kV

Magnetic Field Calculations: Figure 42 and Table 21 show the calculated magnetic field levels for the proposed design. These calculations were made using the proposed structure with a minimum height of 65 feet (above ground).

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[119] Figure is not to scale.

Figure 43. Calculated Magnetic Field Levels[120] for SB-R-TN Model 2 Relocation (on San Bernardino Avenue Looking East)

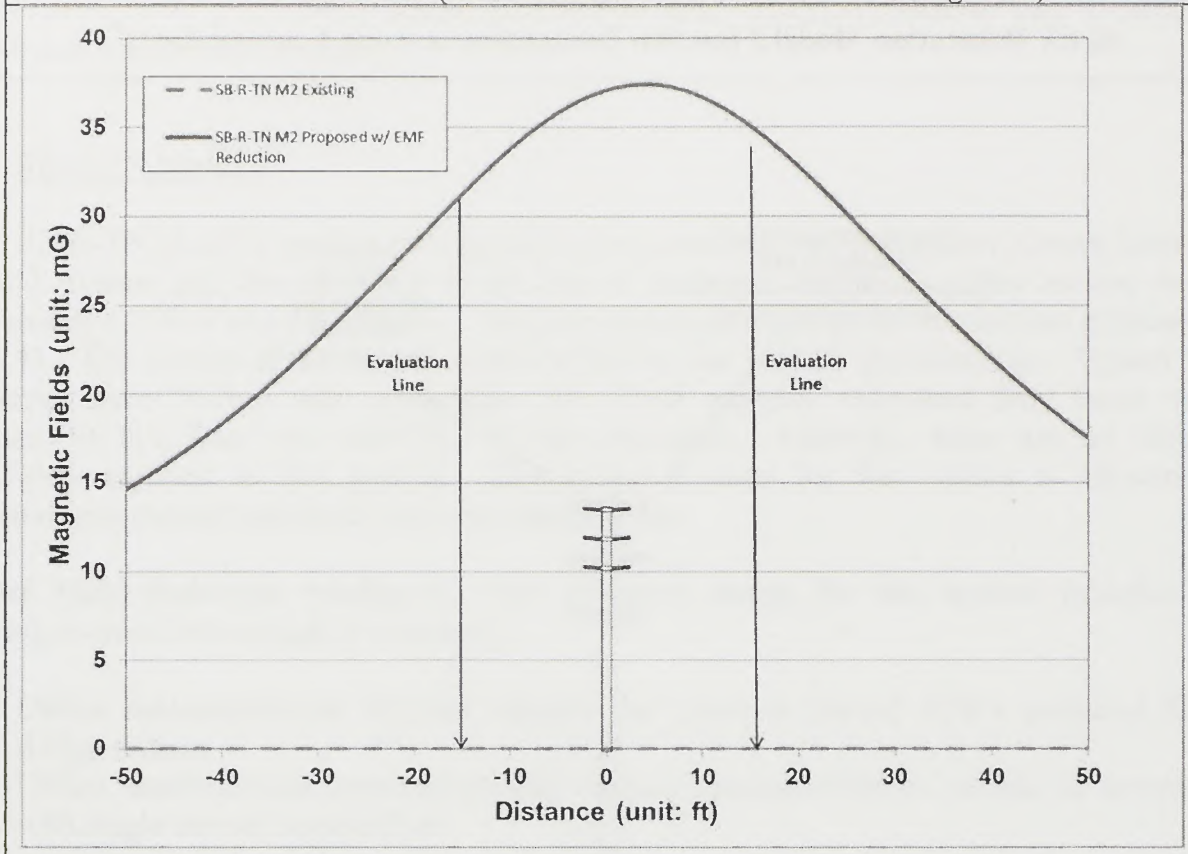


Table 22. Calculated Magnetic Field Levels[121] for SB-R-TN Model 2

Design Options	15 Feet Left of Centerline of structures (mG)	% Reduction	15 Feet Right of Centerline of structures (mG)	% Reduction
Existing	0	-	0	-
Proposed	31.2	-	35.1	-

Recommendations for SB-R-TN Model 2: *Because the proposed design already includes no-cost field reduction measures including structural heights that met the SCE EMF preferred design criteria in the preliminary design, no low-cost field reduction measures such as utilizing taller structures are recommended.*

---

[120] This figure shows calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

[121] This table lists calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

SB-R-TN Model 3

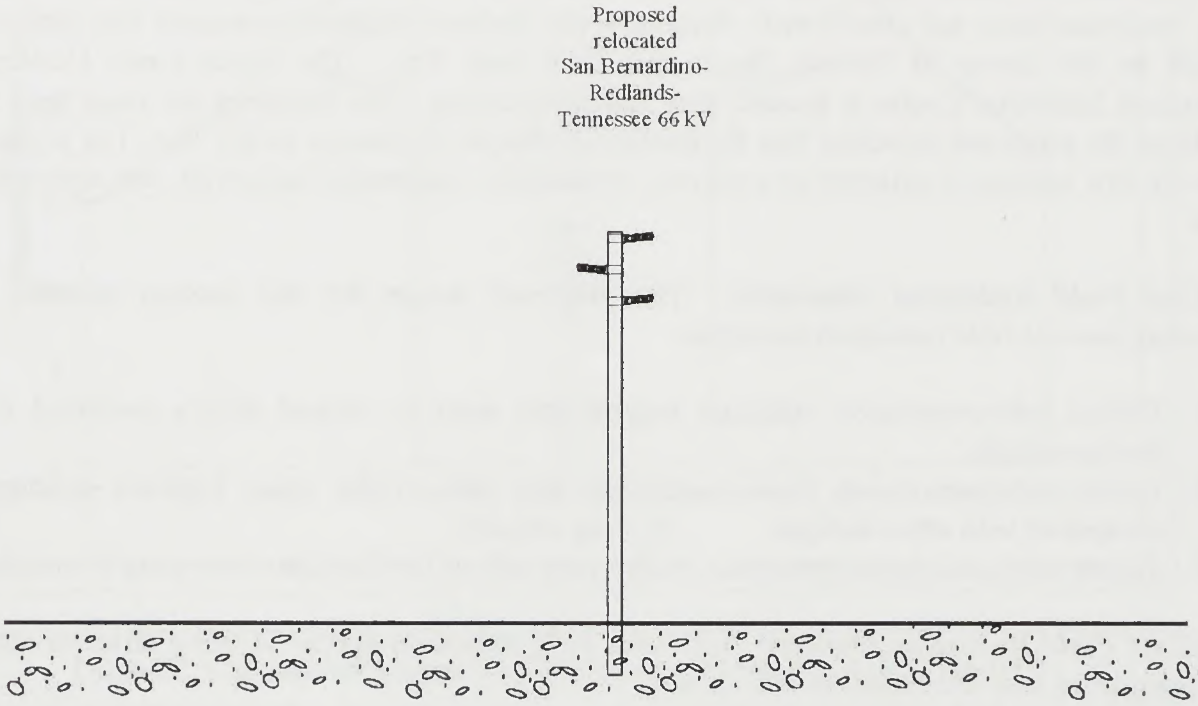
SB-R-TN Model 3 analyzes the typical design where the San Bernardino-Redlands-Tennessee 66 kV line is an overhead single circuit between the intersection of San Bernardino Avenue and Nevada Street in the City of Redlands to the intersection of Barton Road and Iowa Street in the City of Redlands, California. This section would utilize mostly LWS or wood structures. The proposed typical design for this section is shown in Figure 43. Typical 66 kV circuits have 25-foot wide easements. For EMF analysis, calculated field levels were evaluated 12.5 feet from the centerline of the structures, and the effects for any distribution located on the same structures were not considered. Presently, the Barbara Phelps Community Day School is located on the corner of Nevada Street and West Park Ave. The Loma Linda University Behavioral Medicine Center is located near this intersection. The buildings are more than 200 feet from the proposed relocated San Bernardino-Redlands-Tennessee 66 kV line. The proposed route for this section is adjacent to a school, residential, commercial/industrial, and agricultural areas.

No-Cost Field Reduction Measures: The proposed design for this section includes the following no-cost field reduction measures:

1. Utilize subtransmission structure heights that meet or exceed SCE's preferred EMF design criteria
2. Utilize subtransmission line construction that reduces the space between conductors compared with other designs
3. Locate subtransmission structures on the west side of the Nevada street away from school

Low-Cost Field Reduction Options: Low-cost field reduction option of using taller structures was considered near the school in this section.

Figure 44. Proposed 66 kV Structures Design – San Bernardino-Redlands-Tennessee 66 kV Relocation Model 3[122]



Magnetic Field Calculations: Figure 44 and Table 22 show the calculated magnetic field levels for the proposed design. These calculations were made using the proposed structure with a minimum height of 60 feet (above ground).

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[122] Figure is not to scale.

Figure 45. Calculated Magnetic Field Levels[123] for SB-R-TN Model 3 Proposed Relocation

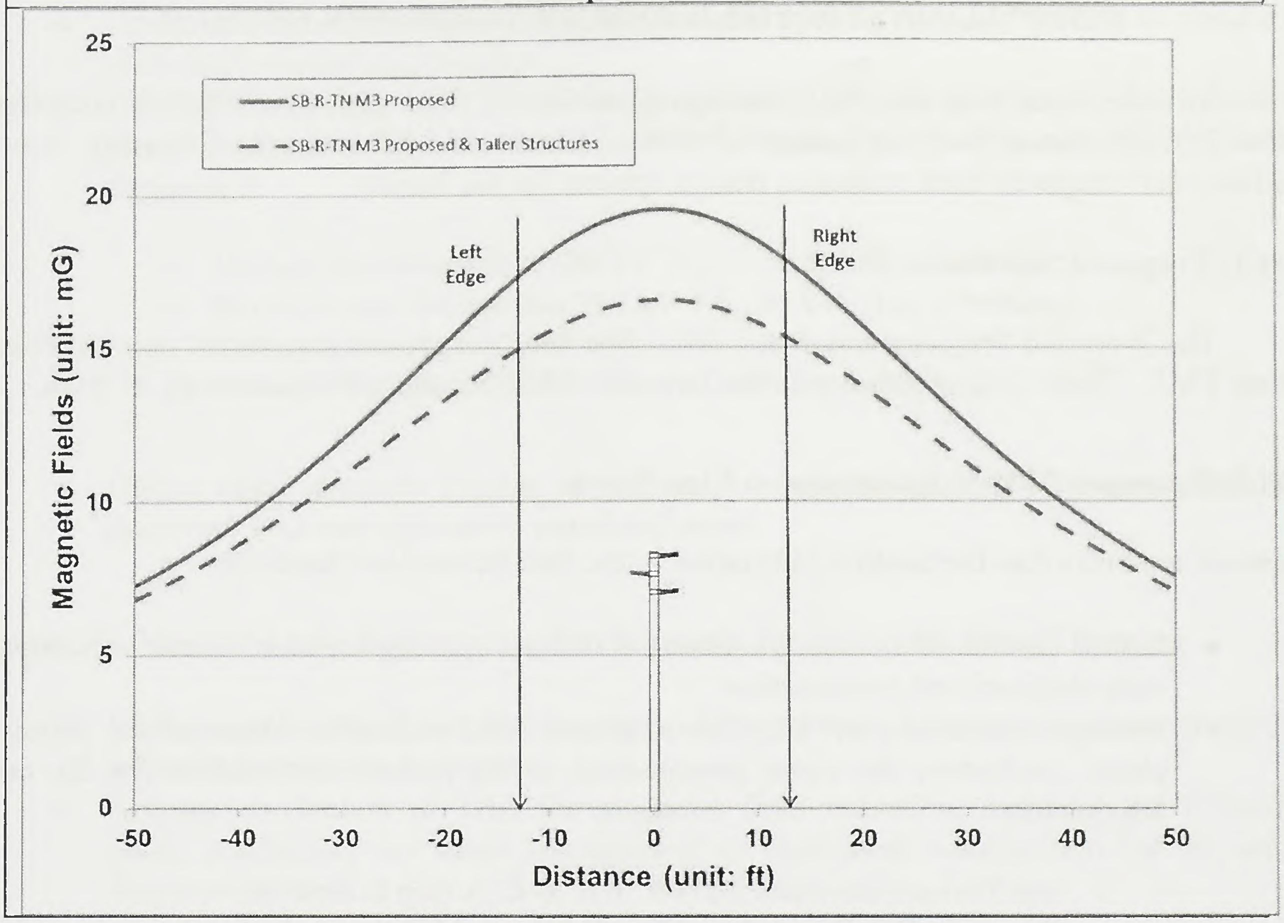

Table 23. Calculated Magnetic Field Levels[124] for SB-R-TN Model 3

Design Options	12.5 Feet Left of Centerline of structures (mG)	% Reduction	12.5 Feet Right of Centerline of structures (mG)	% Reduction
Proposed	17.5	-	17.9	-
Proposed & Taller Structures	15.1	13.7	15.4	14.0

Recommendations for SB-R-TN Model 3: *Because the proposed design already includes no-cost field reduction measures including structural heights that met the SCE EMF preferred design criteria in the preliminary design, no low-cost field reduction measures such as utilizing taller structures are recommended. The low-cost measure of utilizing 10-foot taller structures would not achieve 15% or more field reduction and is not recommended.*

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[123] This figure shows calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

[124] This table lists calculated magnetic field levels for design comparison only and is not meant to predict actual magnetic field levels.

VI. FINAL RECOMMENDATIONS FOR IMPLEMENTING "NO-COST AND LOW-COST" MAGNETIC FIELD REDUCTION DESIGN OPTIONS

In accordance with the "EMF Design Guidelines", filed with the CPUC in compliance with CPUC Decisions 93-11-013 and 06-01-042, SCE would implement the following "no-cost and low-cost" magnetic field reduction design options for the Project:

Part 1: Proposed Substation Work

The Proposed Project substation work scope does not present significant opportunities to reduce EMF. There is no recommendation to reduce EMF for the substation scope of work.

Part 2: Proposed 220 kV Transmission Line Work

Segment 1 – From San Bernardino Substation to the San Bernardino Junction:

- Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction
- Arrange conductors of T/Ls for magnetic field reduction, maintain the following phase conductors the same arrangement or equivalent combination for the entire Segment 1:
    - San Bernardino-Vista 220 kV T/L: **B-C-A** (top to bottom)
    - Etiwanda-San Bernardino 220 kV T/L: **A-C-B** (top to bottom)
    - El Casco-San Bernardino 220 kV T/L: **B-A-C** (top to bottom)
    - Devers-San Bernardino 220 kV T/L: **C-A-B** (top to bottom)
- Utilize taller structure heights **or** increased conductor ground clearance where the proposed T/Ls run adjacent to populated areas

Segment 2 – From San Bernardino Junction to Vista Substation:

- Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction
- Arrange conductors of T/Ls for magnetic field reduction, maintain the following phase conductors the same arrangement or equivalent combination for the entire Segment 2:
    - Devers-Vista No.2 220 kV T/L: **B-C-A** (top to bottom)
    - Devers-Vista No.1 220 kV T/L: **A-C-B** (top to bottom)
- Utilize taller structure heights **or** increased conductor ground clearance where the proposed T/Ls run adjacent to populated areas

Segment 3 – From San Bernardino Substation to El Casco Substation:

- Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction
- Arrange conductors of T/Ls for magnetic field reduction, maintain the following phase conductors the same arrangement or equivalent combination for the entire Segment 3:

    - Devers-San Bernardino 220 kV T/L: **C-A-B** (top to bottom)
    - El Casco-San Bernardino 220 kV T/L: **B-A-C** (top to bottom)
    - Devers-Vista No.2 220 kV T/L: **B-C-A** (top to bottom)
    - Devers-Vista No.1 220 kV T/L: **A-C-B** (top to bottom)

- Utilize taller structure heights **or** increased conductor ground clearance where the proposed T/Ls run adjacent to populated areas

Segment 4 – From El Casco Substation to San Gorgonio Avenue in the City of Banning:

- Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction
- Arrange conductors of T/Ls for magnetic field reduction, maintain the following phase conductors the same arrangement or equivalent combination for the entire Segment 4:

    - Devers-San Bernardino 220 kV T/L: **C-A-B** (top to bottom)
    - Devers-El Casco 220 kV T/L: **B-A-C** (top to bottom)
    - Devers-Vista No.2 220 kV T/L: **B-C-A** (top to bottom)
    - Devers-Vista No.1 220 kV T/L: **A-C-B** (top to bottom)

- Utilize taller structure heights **or** increased conductor ground clearance where the proposed T/Ls run adjacent to populated areas

Segment 5 – From San Gorgonio Avenue in the City of Banning to the eastern limit of the Morongo Reservation at Rushmore Avenue:

- Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction
- Arrange conductors of T/Ls for magnetic field reduction, maintain the following phase conductors the same arrangement or equivalent combination for the entire Segment 5:

    - Devers-San Bernardino 220 kV T/L: **C-A-B** (top to bottom)
    - Devers-El Casco 220 kV T/L: **B-A-C** (top to bottom)

  - Devers-Vista No.2 220 kV T/L: **B-C-A** (top to bottom)
  - Devers-Vista No.1 220 kV T/L: **A-C-B** (top to bottom)

- Utilize taller structure heights **or** increased conductor ground clearance where the proposed T/Ls run adjacent to populated areas

Segment 6 – From the eastern limit of the Morongo Reservation at Rushmore Avenue to Devers Substation:

- Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction
- Arrange conductors of T/Ls for magnetic field reduction, maintain the following phase conductors the same arrangement or equivalent combination for the entire Segment 6:
  - Devers-San Bernardino 220 kV T/L: **C-A-B** (top to bottom)
  - Devers-El Casco 220 kV T/L: **B-A-C** (top to bottom)
  - Devers-Vista No.2 220 kV T/L: **B-C-A** (top to bottom)
  - Devers-Vista No.1 220 kV T/L: **A-C-B** (top to bottom)
- Utilize taller structure heights **or** increased conductor ground clearance where the proposed T/Ls run adjacent to populated areas

Part 3: Proposed 66 kV Subtransmission Line Work

San Bernardino-Redlands-Timoteo 66 kV Relocation:

Section 1 (SB-R-T M1): Parallel with existing Calectric-Homart-Mentone 115 kV subtransmission line on the same structure:

- Utilize subtransmission structure heights that meet or exceed SCE's preferred EMF design criteria
- Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction

Section 2 (SB-R-T M2): Single circuit overhead San Bernardino-Redlands-Timoteo 66 kV subtransmission line:

- Utilize subtransmission structure heights that meet or exceed SCE's preferred EMF design criteria

- Utilize subtransmission line construction that reduces the space between conductors compared with other designs

Section 3 (SB-R-T M3): Single circuit underground San Bernardino-Redlands-Timoteo 66 kV subtransmission line:

- Utilize underground subtransmission construction for crossing other transmission structures and other engineering reasons

San Bernardino-Redlands-Tennessee 66 kV Relocation:

Section 1 (SB-R-TN M1): Parallel with existing El Casco-Purewater-Vista 115 kV and San Bernardino-Highland 66 kV subtransmission lines on separate structures:

- Utilize subtransmission structure heights that meet or exceed SCE's preferred EMF design criteria
- Utilize subtransmission line construction that reduces the space between conductors compared with other designs
- Arrange conductors of subtransmission lines for magnetic field reduction with the following arrangement or equivalent combination:
    - Existing El Casco-Purewater-Vista 115 kV: **A-C-B** (top to bottom, no change)
    - Existing San Bernardino-Highland 66 kV: **A-B-C** (top to bottom, no change)
    - Relocated San Bernardino-Redlands-Tennessee 66 kV: **C-A-B** (top to bottom)

Section 2 (SB-R-TN M2): Parallel with existing Calectric-Homart-Mentone 115 kV subtransmission line on the same structure:

- Utilize subtransmission structure heights that meet or exceed SCE's preferred EMF design criteria
- Utilize double-circuit construction that reduces spacing between circuits as compared with single-circuit construction

Section 3 (SB-R-TN M3): Single circuit overhead San Bernardino-Redlands-Tennessee 66 kV Subtransmission line:

- Utilize subtransmission structure heights that meet or exceed SCE's preferred EMF design criteria
- Utilize subtransmission line construction that reduces the space between conductors compared with other designs

The recommended "no-cost and low-cost" magnetic field reduction design options listed above are based upon preliminary engineering design. If the preliminary engineering design is significantly modified (in the context of evaluating and implementing CPUC's "no-cost and low-cost" EMF Policy), then an Addendum to the FMP will be prepared.

SCE's plan for applying the above "no-cost and low-cost" magnetic field reduction design options uniformly for the Project is consistent with the CPUC's EMF Decisions No. 93-11-013 and No. 06-01-042. Furthermore, the recommendations above meet the CPUC approved EMF Design Guidelines, as well as all applicable national and state safety standards for new electrical facilities.

VII. APPENDIX A: TWO-DIMENSIONAL MODEL ASSUMPTIONS AND YEAR 2019 FORECASTED LOADING CONDITIONS

Magnetic Field Model Assumptions:

SCE uses a computer program titled "MFields"[125] to model the magnetic field characteristics of various transmission designs options. All magnetic field models and the calculated results of magnetic field levels presented in this document are intended only for purposes of identifying the relative differences in magnetic field levels among various transmission line and subtransmission line design alternatives under a specific set of modeling assumptions and determining whether particular design alternatives can achieve magnetic field level reductions of 15 percent or more. The calculated results are not intended to be predictors of the actual magnetic field levels at any given time or at any specific location if and when the Project is constructed.

Typical two-dimensional magnetic field modeling assumptions include:

- All transmission and subtransmission lines were modeled using forecasted peak loads (see Tables 23 and 24).
- All conductors were assumed to be straight and infinitely long.
- Average conductor heights account for line sag used in the calculation for the transmission and subtransmission line designs.
- Magnetic field strength was calculated at a height of three feet above ground.
- Resultant magnetic fields values were presented in this FMP.
- All line currents were assumed to be balanced. (i.e. neutral or ground currents are not considered)
- Terrain was assumed to be flat.
- Project dominant power flow directions were used.

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[125] SCE, MFields for Excel, Version 2.0, 2007.

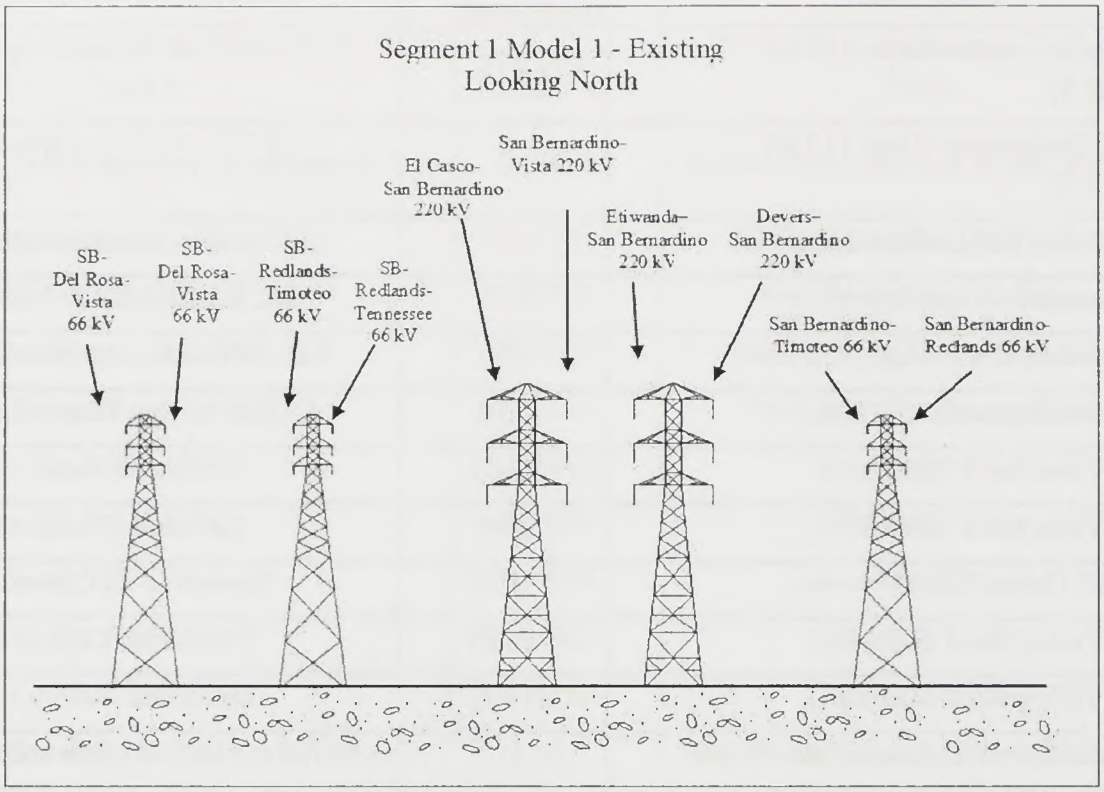
Table 24. Year 2019 Forecasted Loading Conditions for the Proposed Project (After Project Completion)		
Line Name	**Current** (Amps)	**Power Flow Direction**
El Casco-Purewater-Vista 115 kV (Segment 3)	273	El Casco to Purewater, open at Vista
El Casco-Purewater-Vista 115 kV (Segment 2)	0	Normally no current in this section
El Casco-San Bernardino 220 kV	943	El Casco to San Bernardino
San Bernardino-Vista 220 kV	1760	San Bernardino to Vista
Etiwanda-San Bernardino 220 kV	1182	San Bernardino to Etiwanda
Devers-San Bernardino 220 kV	1641	Devers to San Bernardino
Devers-Vista No.2 220 kV	1938	Devers to Vista
Devers-Vista No.1 220 kV	2149	Devers to Vista
Devers-El Casco 220 kV	1839	Devers to El Casco
Devers-Valley No.1 500 kV	1210	Devers to Valley
Devers-Valley No.2 500 kV	1210	Devers to Valley
San Bernardino-Del Rosa-Vista 66 kV	417	San Bernardino to other substations
San Bernardino-Cardiff-Unimed-Vista 66 kV	463	San Bernardino to other substations
San Bernardino-Redlands 66 kV	737	San Bernardino to Redlands
San Bernardino-Timoteo 66 kV	690	San Bernardino to Timoteo
El Casco-Purewater-Vista 115 kV (on San Bernardino Ave)	0	Normally no current in this section
Calectric-Homart-Mentone 115 kV (on San Bernardino Ave)	0	Normally no current in this section
San Bernardino-Highland 66 kV	791	San Bernardino to Highland
San Bernardino-Redlands-Timoteo 66 kV	614	San Bernardino to other substations
San Bernardino-Redlands-Tennessee 66 kV	697	San Bernardino to other substations
Moreno-Moval-Vista 115 kV	0	Normally carries no current in this section

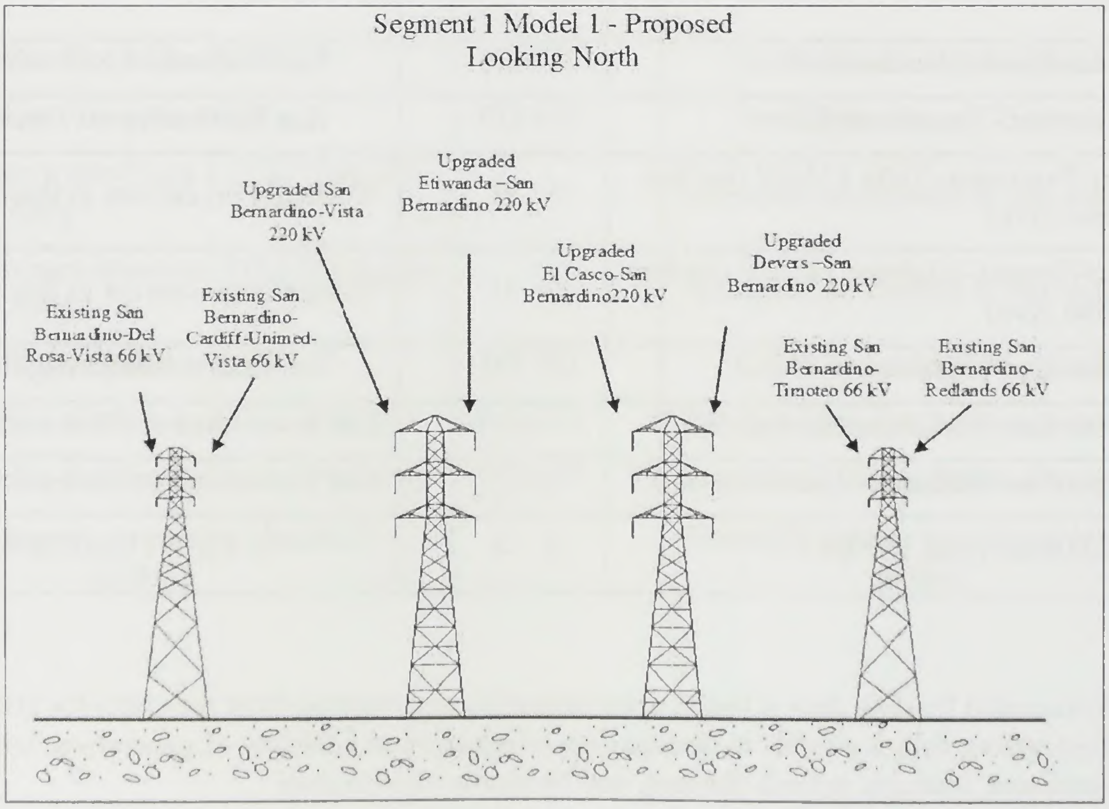
Table 25. Year 2019 Forecast Loading Conditions without the Proposed Project		
Line Name	**Current (Amps)**	**Power Flow Direction**
El Casco-Purewater-Vista 115 kV (Segment 3)	273	El Casco to Purewater, open at Vista
El Casco-Purewater-Vista 115 kV (Segment 2)	0	Normally no current in this section
El Casco-San Bernardino 220 kV	333	El Casco to San Bernardino
San Bernardino-Vista 220 kV	956	San Bernardino to Vista
Etiwanda-San Bernardino 220 kV	750	San Bernardino to Etiwanda
Devers-San Bernardino 220 kV	750	Devers to San Bernardino
Devers-Vista No.2 220 kV	1163	Devers to Vista
Devers-Vista No.1 220 kV	998	Devers to Vista
Devers-El Casco 220 kV	1020	Devers to El Casco
Devers-Valley No.1 500 kV	1430	Devers to Valley
Devers-Valley No.2 500 kV	1430	Devers to Valley
San Bernardino-Del Rosa-Vista 66 kV	417	San Bernardino to other substations
San Bernardino-Cardiff-Unimed-Vista 66 kV	463	San Bernardino to other substations
San Bernardino-Redlands 66 kV	690	San Bernardino to Redlands
San Bernardino-Timoteo 66 kV	737	San Bernardino to Timoteo
El Casco-Purewater-Vista 115 kV (on San Bernardino Ave)	0	Normally no current in this section
Calectric-Homart-Mentone 115 kV (on San Bernardino Ave)	0	Normally no current in this section
San Bernardino-Highland 66 kV	791	San Bernardino to Highland
San Bernardino-Redlands-Timoteo 66 kV	614	San Bernardino to other substations
San Bernardino-Redlands-Tennessee 66 kV	697	San Bernardino to other substations
Moreno-Moval-Vista 115 kV	0	Normally carries no current in this section

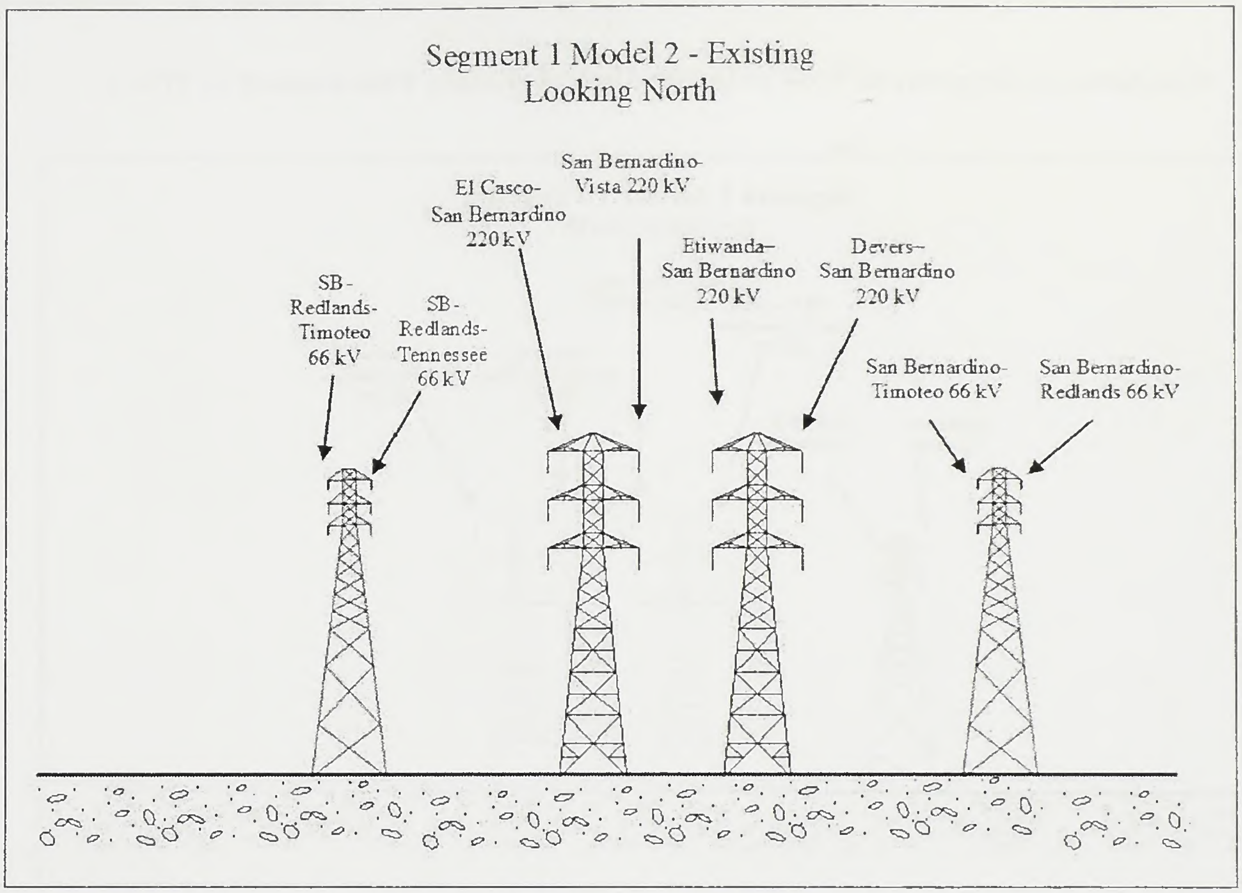
Notes:

1. Forecasted loading data is based upon scenarios representing load forecasts for 2019. The forecasting data is subject to change depending upon availability of generation, load increases, changes in load demand, and by many other factors.

VIII. APPENDIX B: EXISTING AND PROPOSED TRANSMISSION CONFIGURATIONS

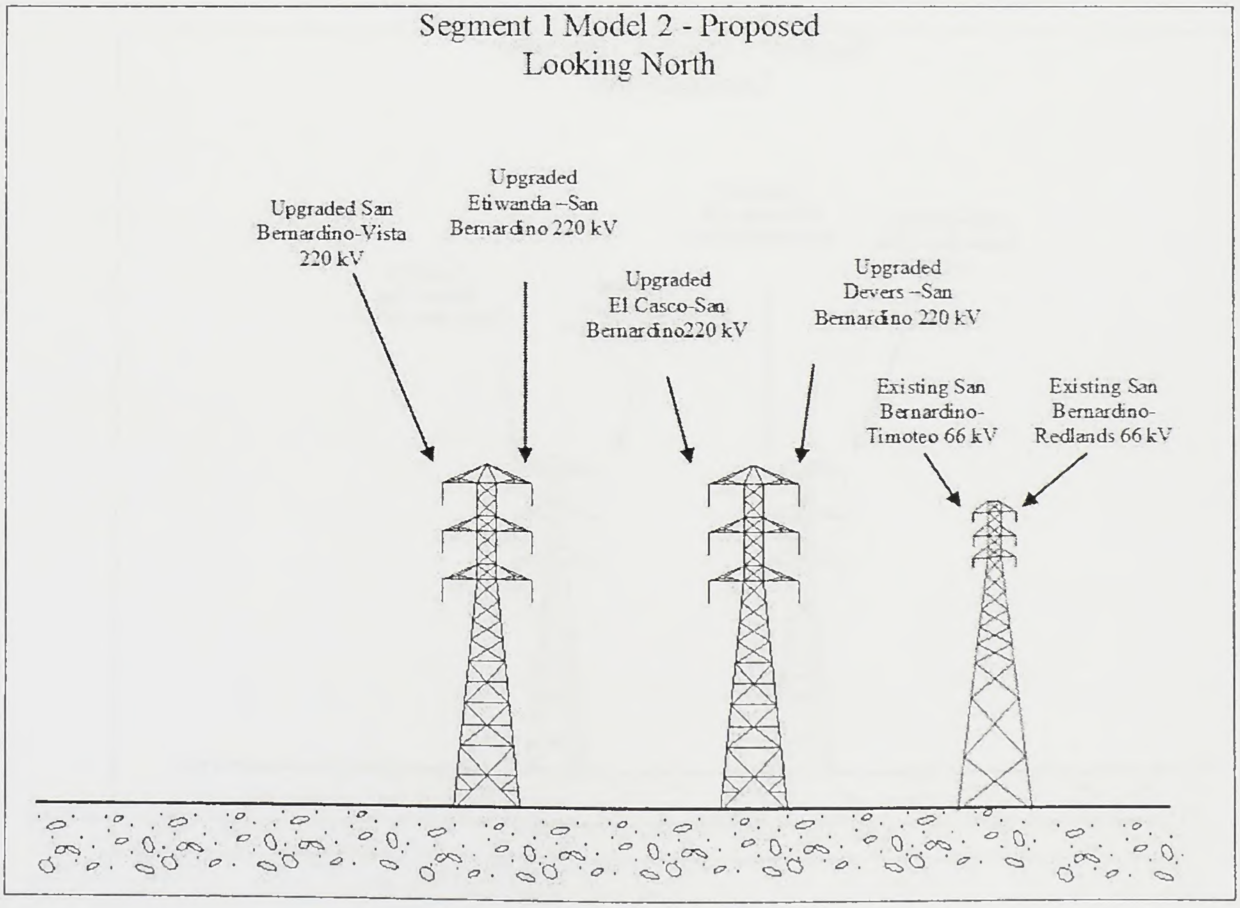

Segment 1 Model 1 - Existing
Looking North
SB-Del Rosa-Vista 66 kV
SB-Del Rosa-Vista 66 kV
SB-Redlands-Timoteo 66 kV
SB-Redlands-Tennessee 66 kV
El Casco-San Bernardino 220 kV
San Bernardino-Vista 220 kV
Etiwanda–San Bernardino 220 kV
Devers–San Bernardino 220 kV
San Bernardino-Timoteo 66 kV
San Bernardino-Redlands 66 kV


Segment 1 Model 1 - Proposed
Looking North
Existing San Bernardino-Del Rosa-Vista 66 kV
Existing San Bernardino-Cardiff-Unimed-Vista 66 kV
Upgraded San Bernardino-Vista 220 kV
Upgraded Etiwanda –San Bernardino 220 kV
Upgraded El Casco-San Bernardino220 kV
Upgraded Devers –San Bernardino 220 kV
Existing San Bernardino-Timoteo 66 kV
Existing San Bernardino-Redlands 66 kV



Segment 1 Model 2 - Existing
Looking North

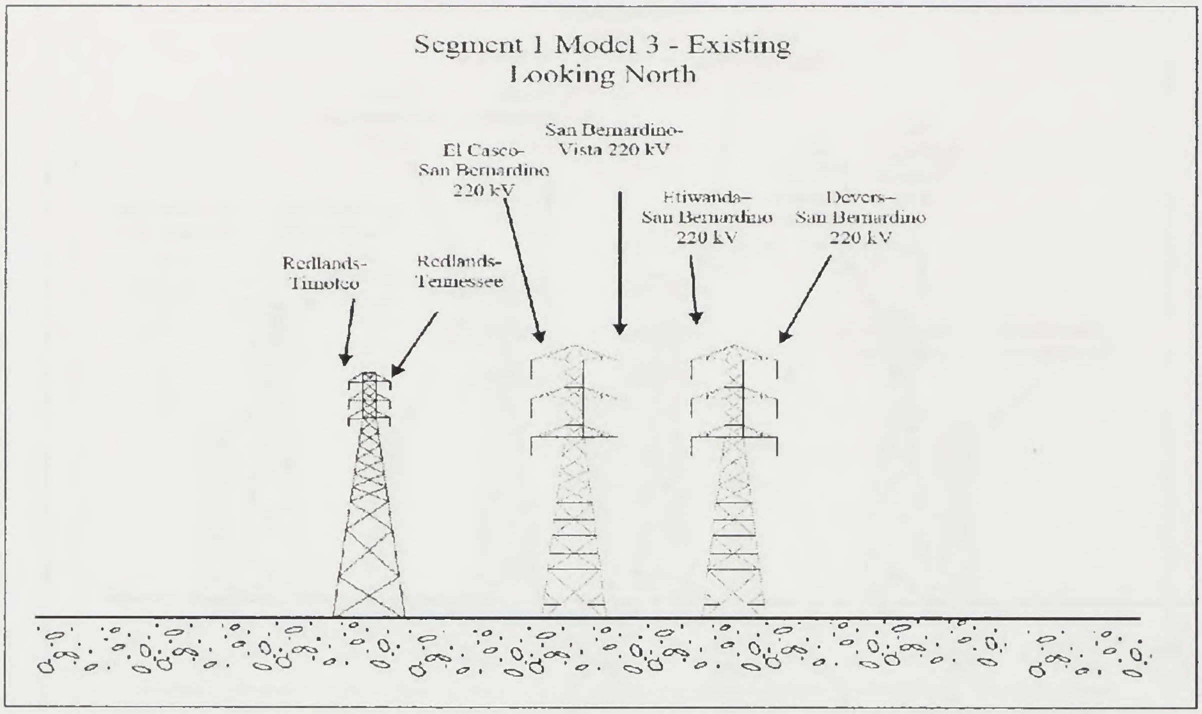
SB-Redlands-Timoteo 66 kV
SB-Redlands-Tennessee 66 kV
El Casco-San Bernardino 220 kV
San Bernardino-Vista 220 kV
Etiwanda–San Bernardino 220 kV
Devers–San Bernardino 220 kV
San Bernardino-Timoteo 66 kV
San Bernardino-Redlands 66 kV



Segment 1 Model 2 - Proposed
Looking North

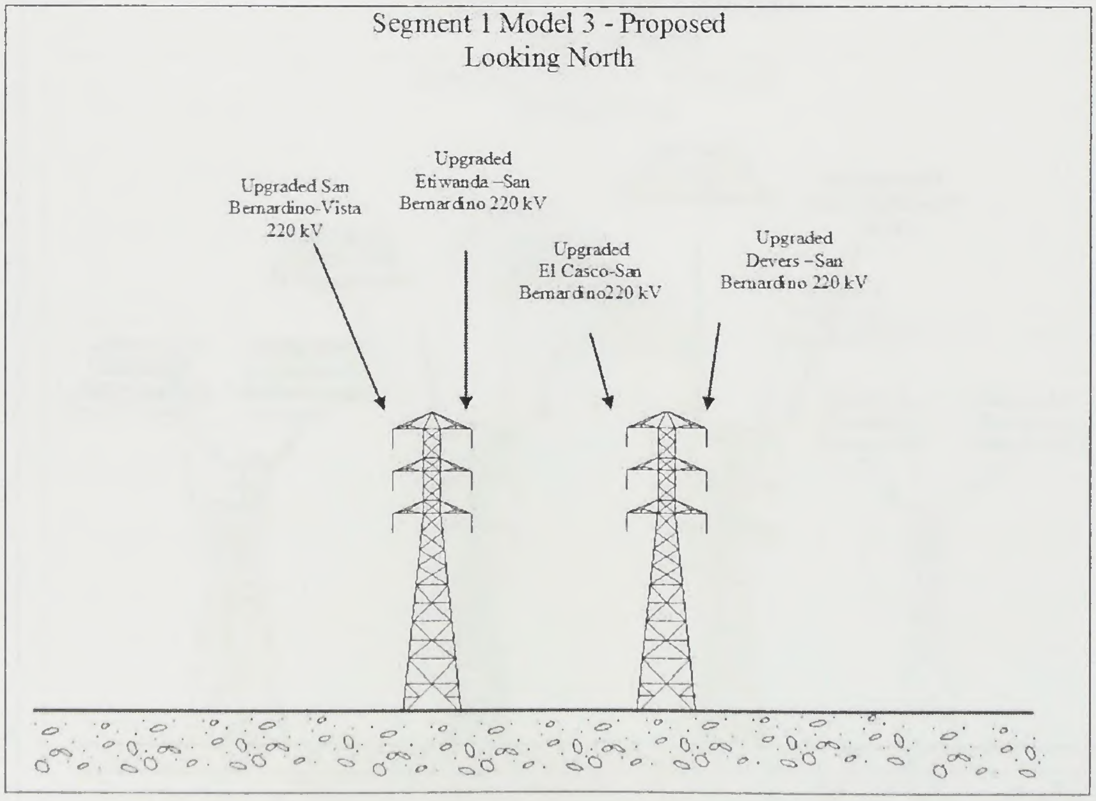
Upgraded San Bernardino-Vista 220 kV
Upgraded Etiwanda –San Bernardino 220 kV
Upgraded El Casco-San Bernardino220 kV
Upgraded Devers –San Bernardino 220 kV
Existing San Bernardino-Timoteo 66 kV
Existing San Bernardino-Redlands 66 kV

Attachment to Response of West of Devers Upgrade Project Data Request #3 PHS-4



Segment 1 Model 3 - Existing
Looking North

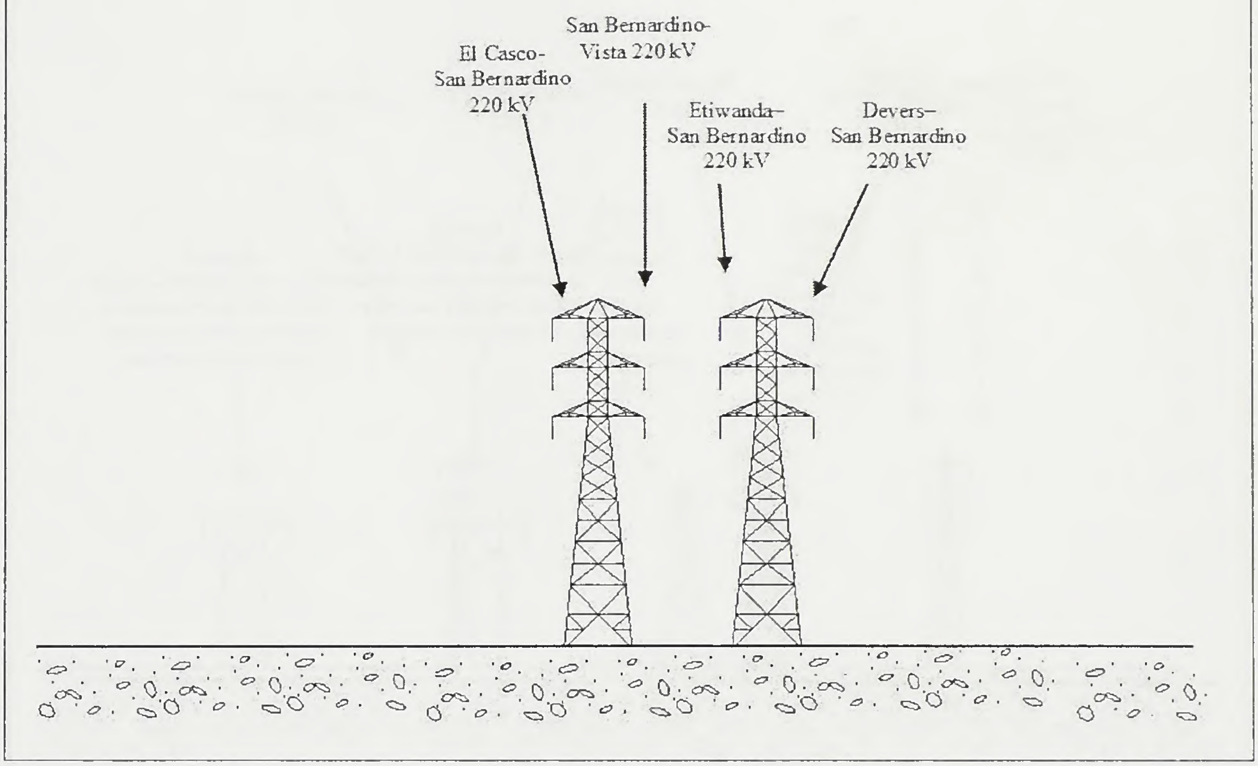
San Bernardino-Vista 220 kV
El Casco-San Bernardino 220 kV
Etiwanda–San Bernardino 220 kV
Devers–San Bernardino 220 kV
Redlands-Timoteo
Redlands-Tennessee



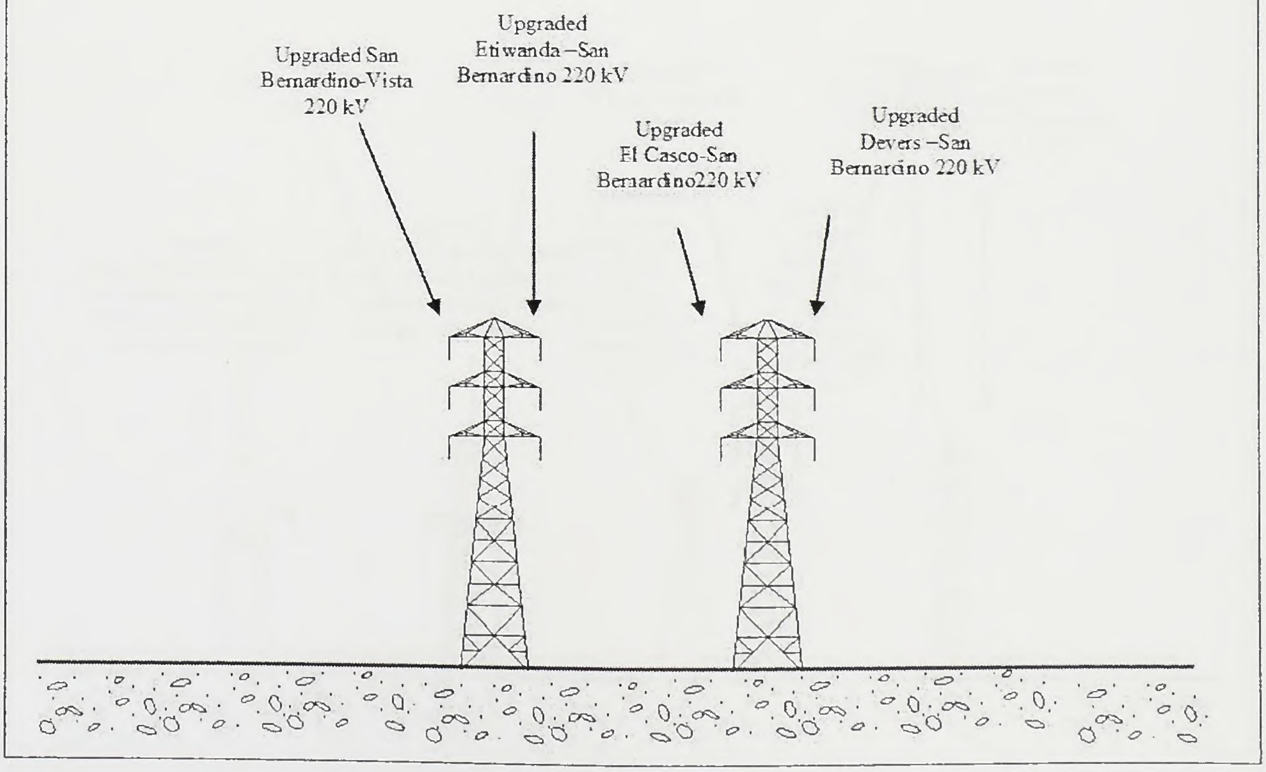
Segment 1 Model 3 - Proposed
Looking North

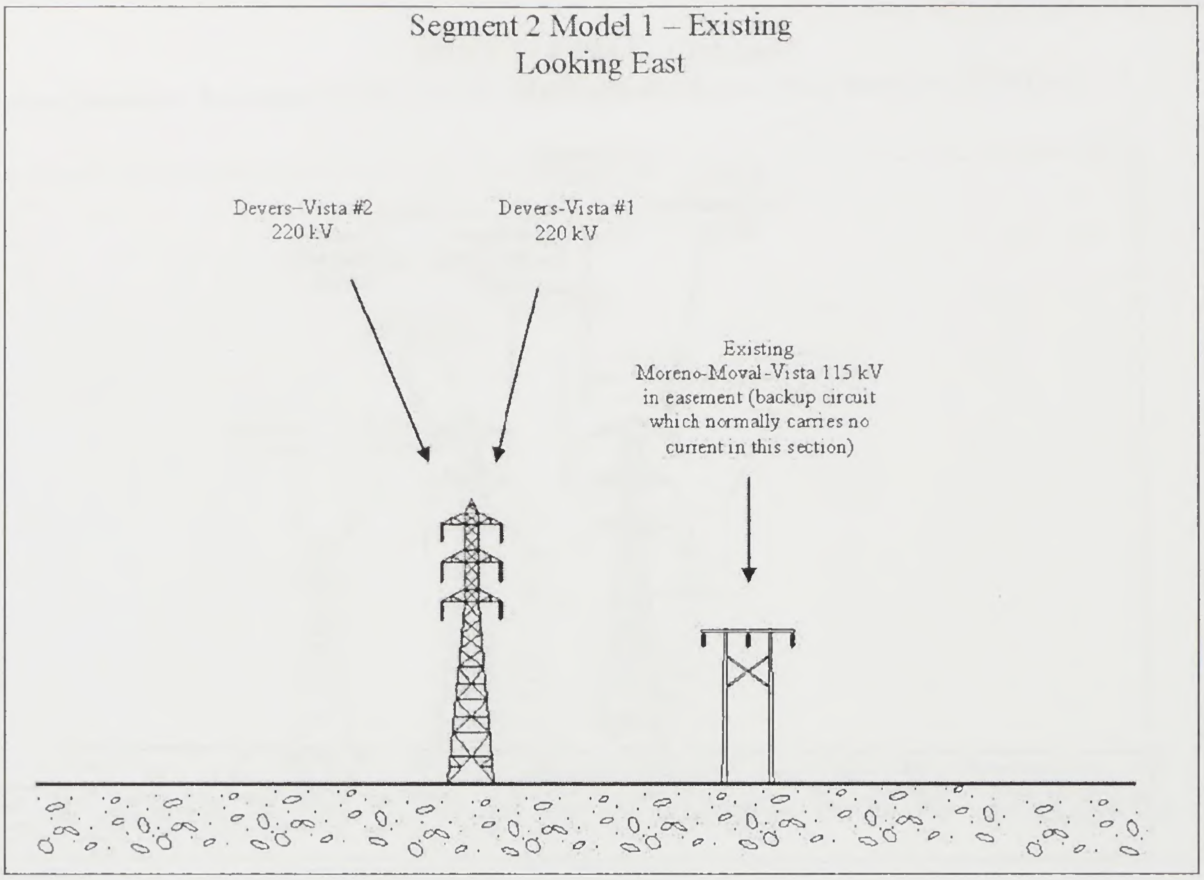
Upgraded Etiwanda –San Bernardino 220 kV
Upgraded San Bernardino-Vista 220 kV
Upgraded El Casco-San Bernardino220 kV
Upgraded Devers –San Bernardino 220 kV

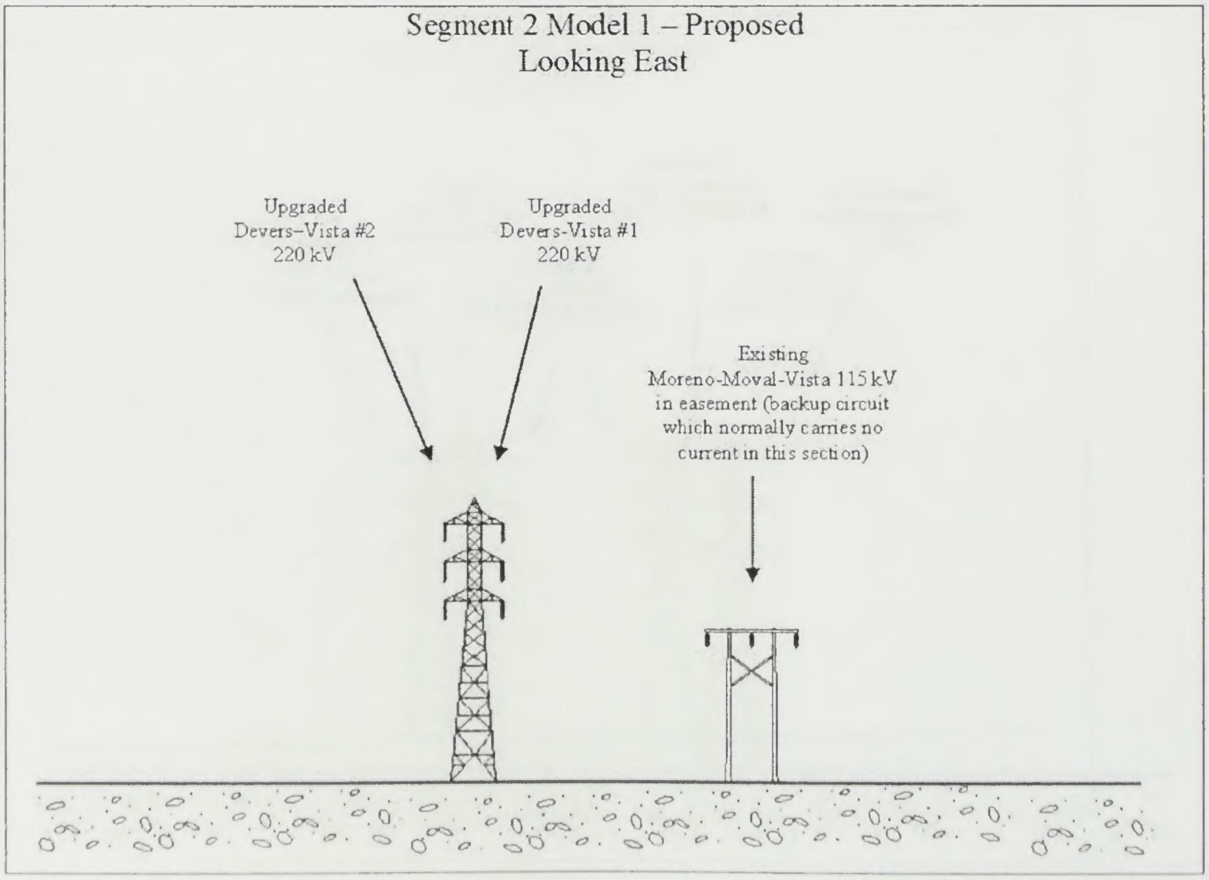
Segment 1 Model 4 - Existing
Looking North

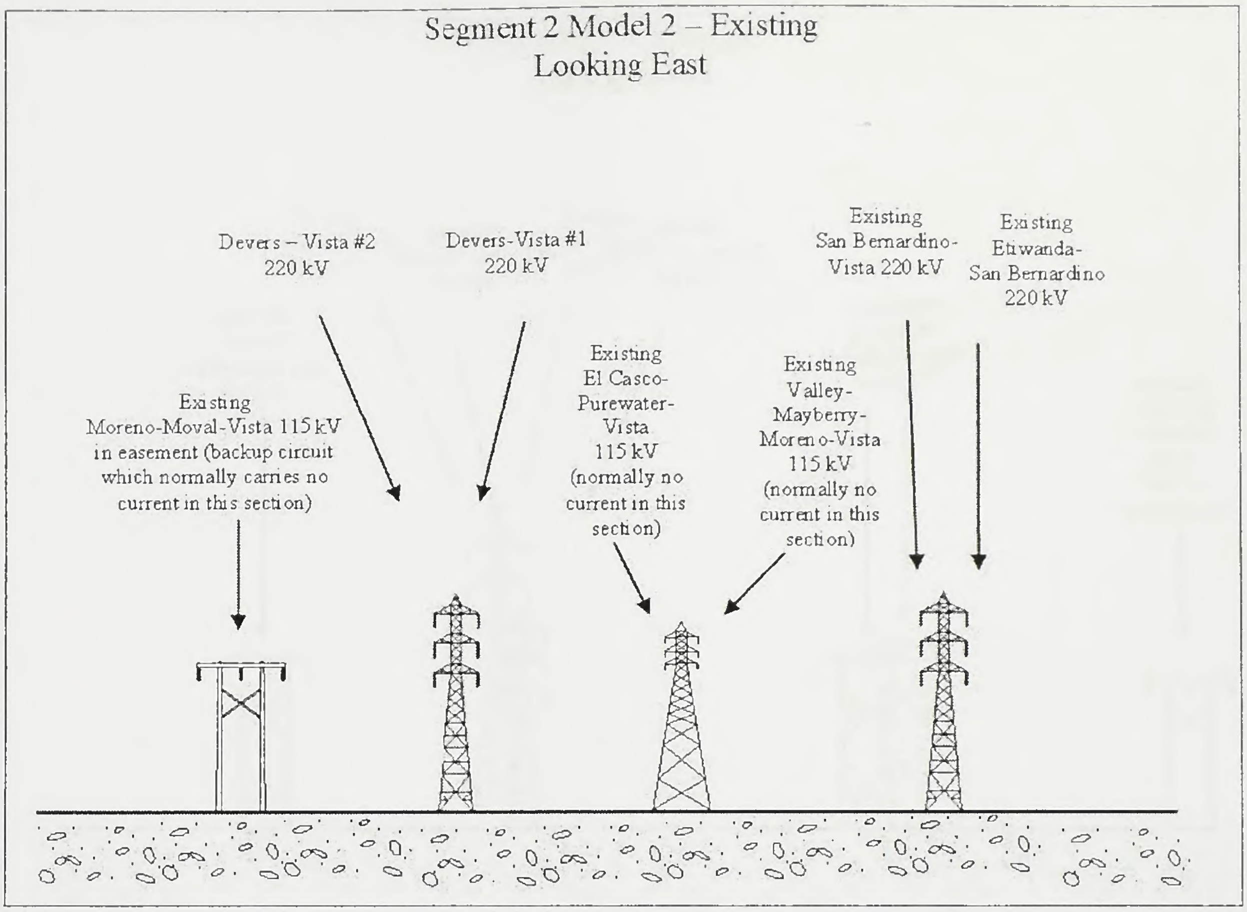


Segment 1 Model 4 - Proposed
Looking North

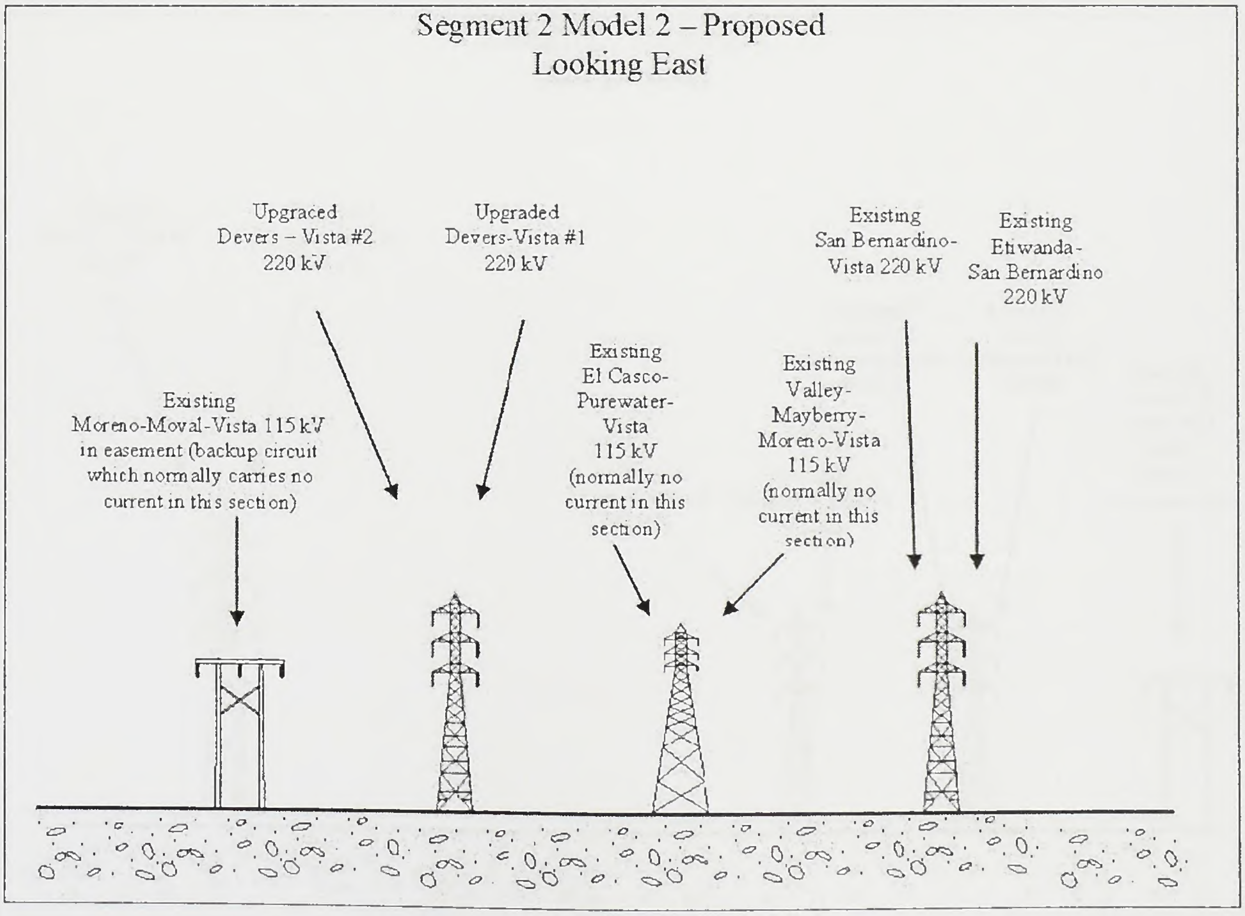



Segment 2 Model 1 – Existing
Looking East
Devers–Vista #2
220 kV
Devers-Vista #1
220 kV
Existing
Moreno-Moval-Vista 115 kV
in easement (backup circuit
which normally carries no
current in this section)

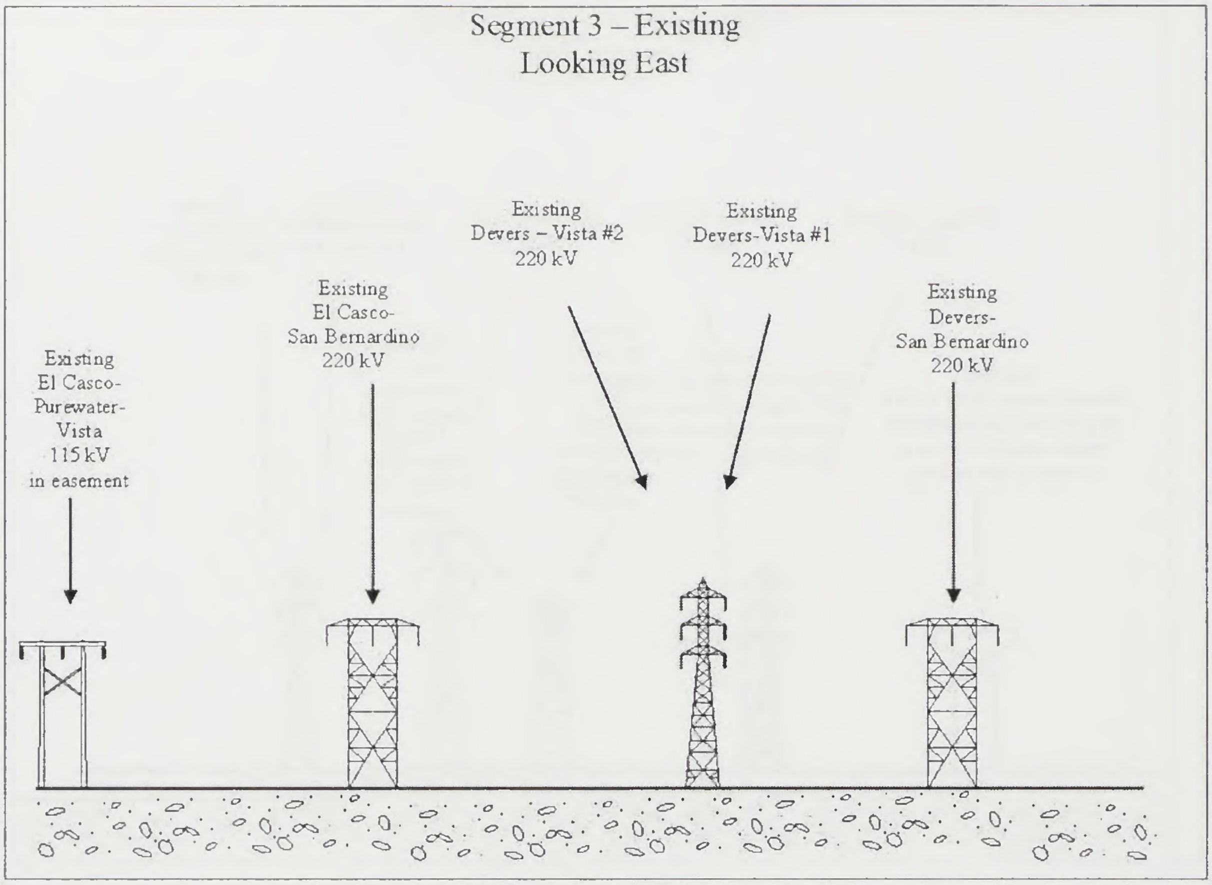

Segment 2 Model 1 – Proposed
Looking East
Upgraded
Devers–Vista #2
220 kV
Upgraded
Devers-Vista #1
220 kV
Existing
Moreno-Moval-Vista 115 kV
in easement (backup circuit
which normally carries no
current in this section)

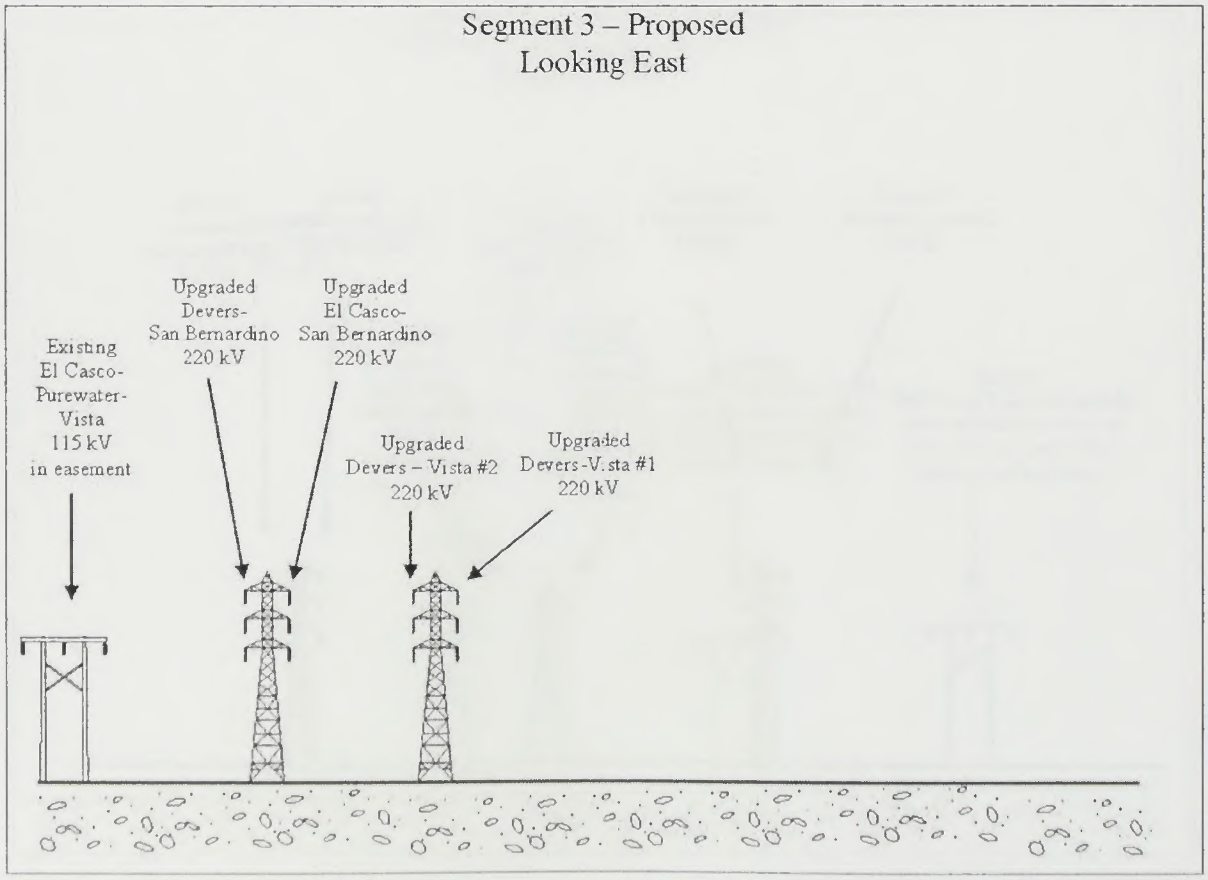


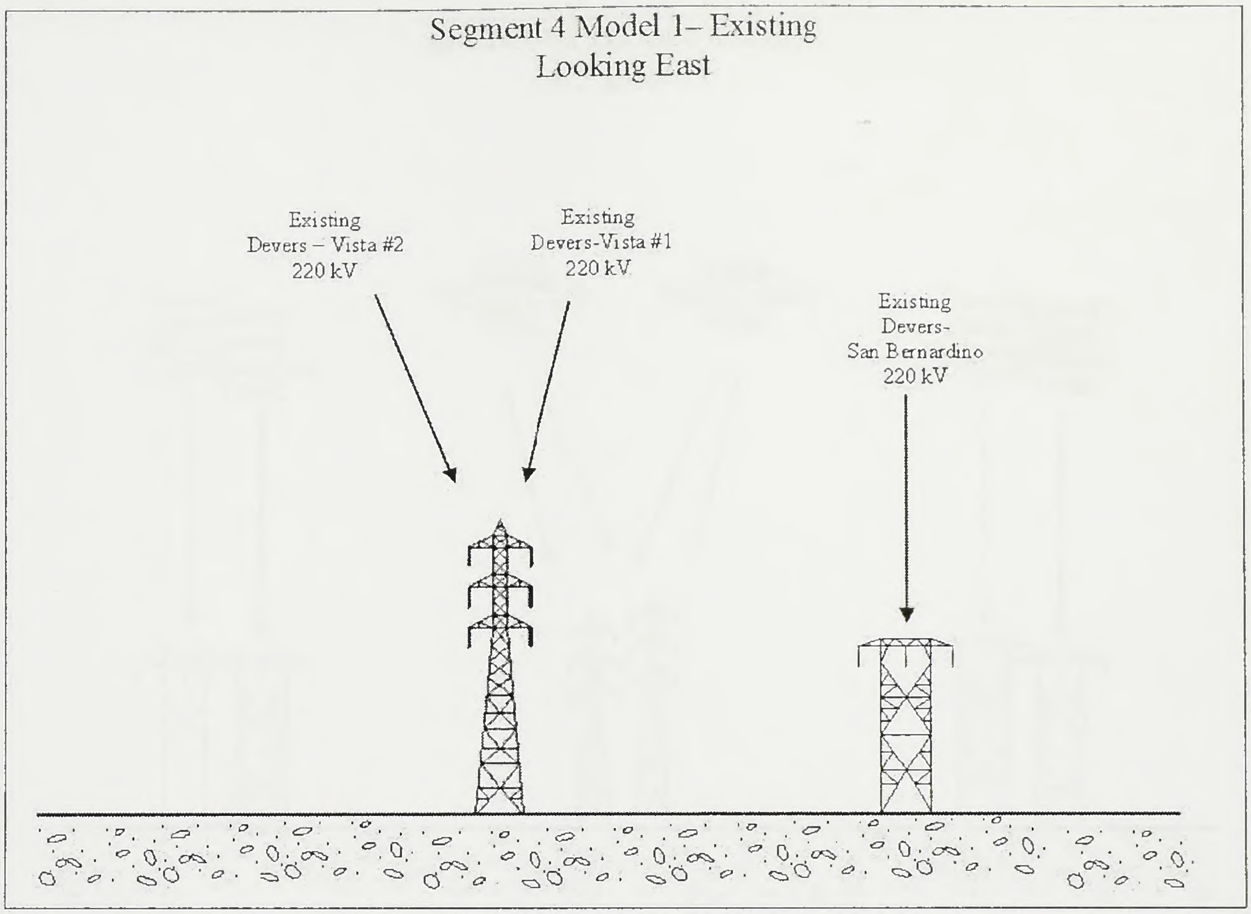
Segment 2 Model 2 – Existing
Looking East



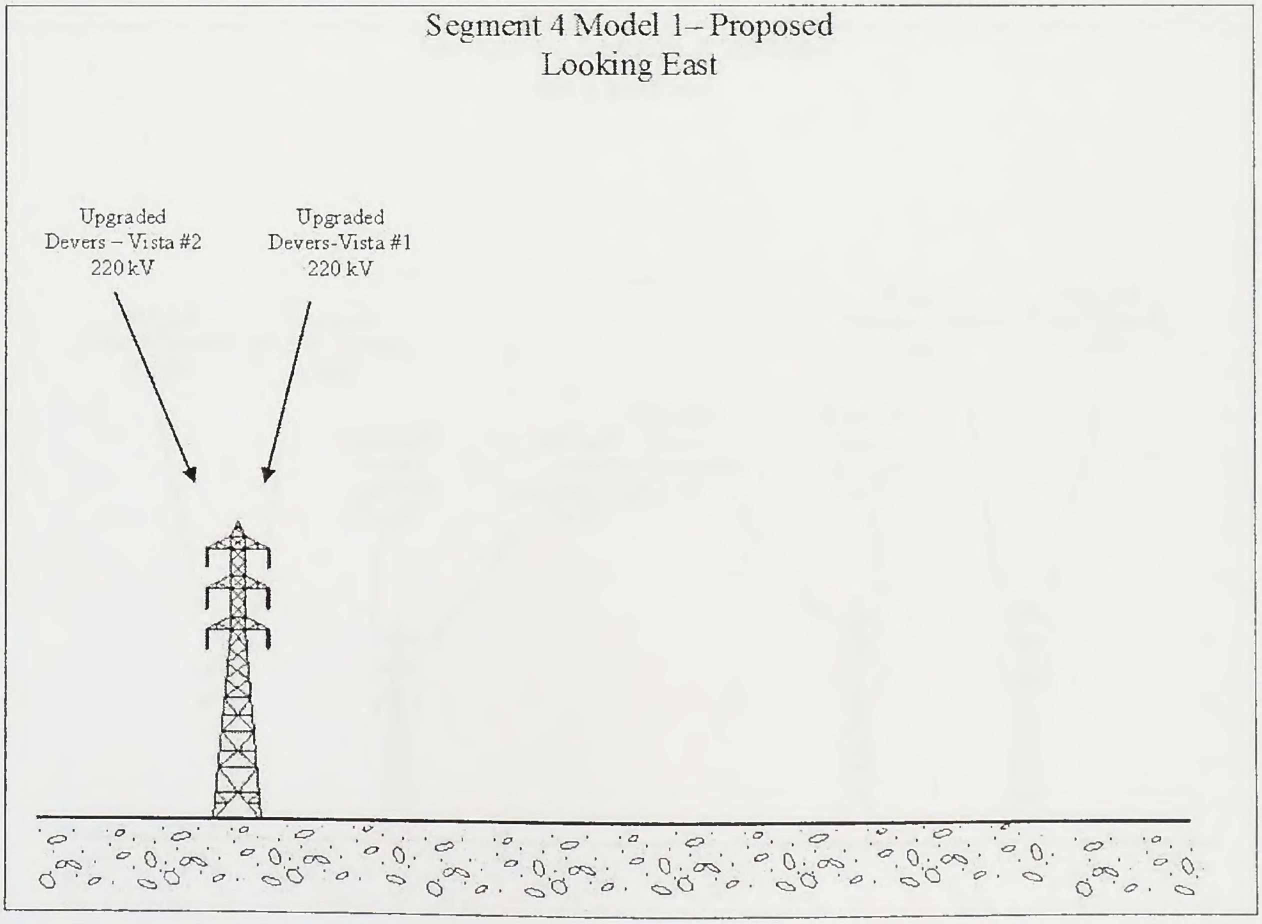
Segment 2 Model 2 – Proposed
Looking East


Segment 3 – Existing
Looking East


Segment 3 – Proposed
Looking East

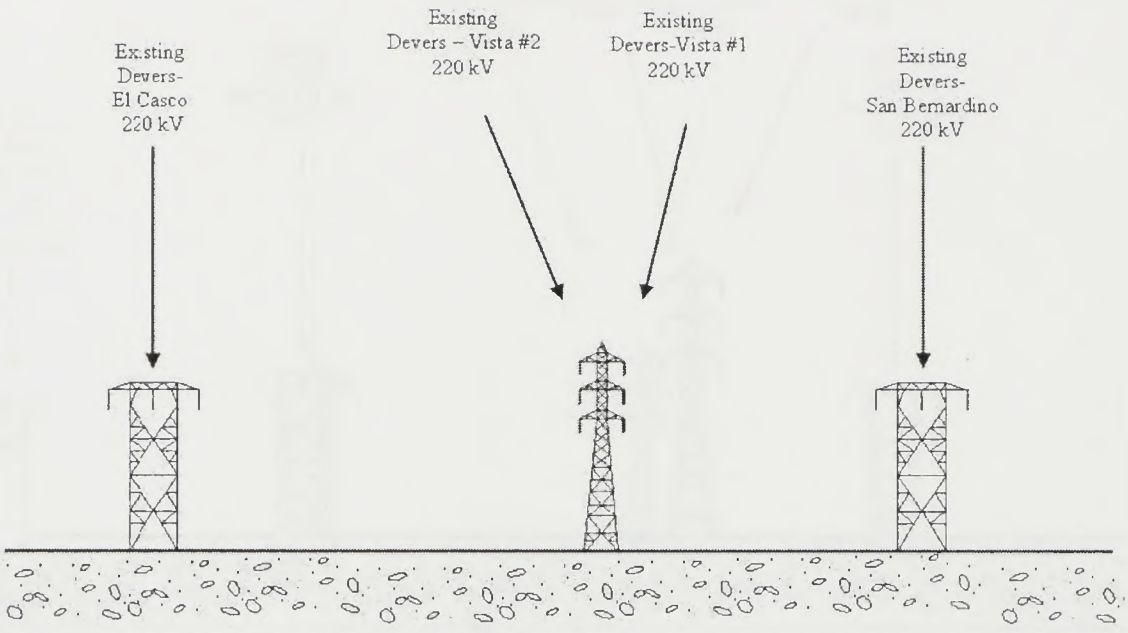


Segment 4 Model 1– Existing
Looking East

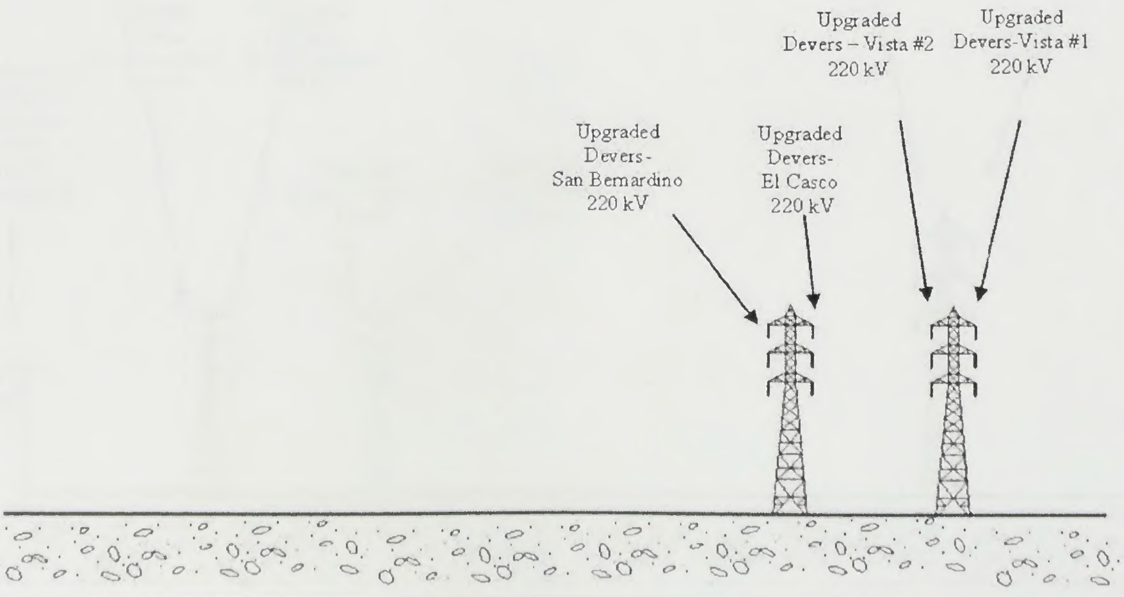


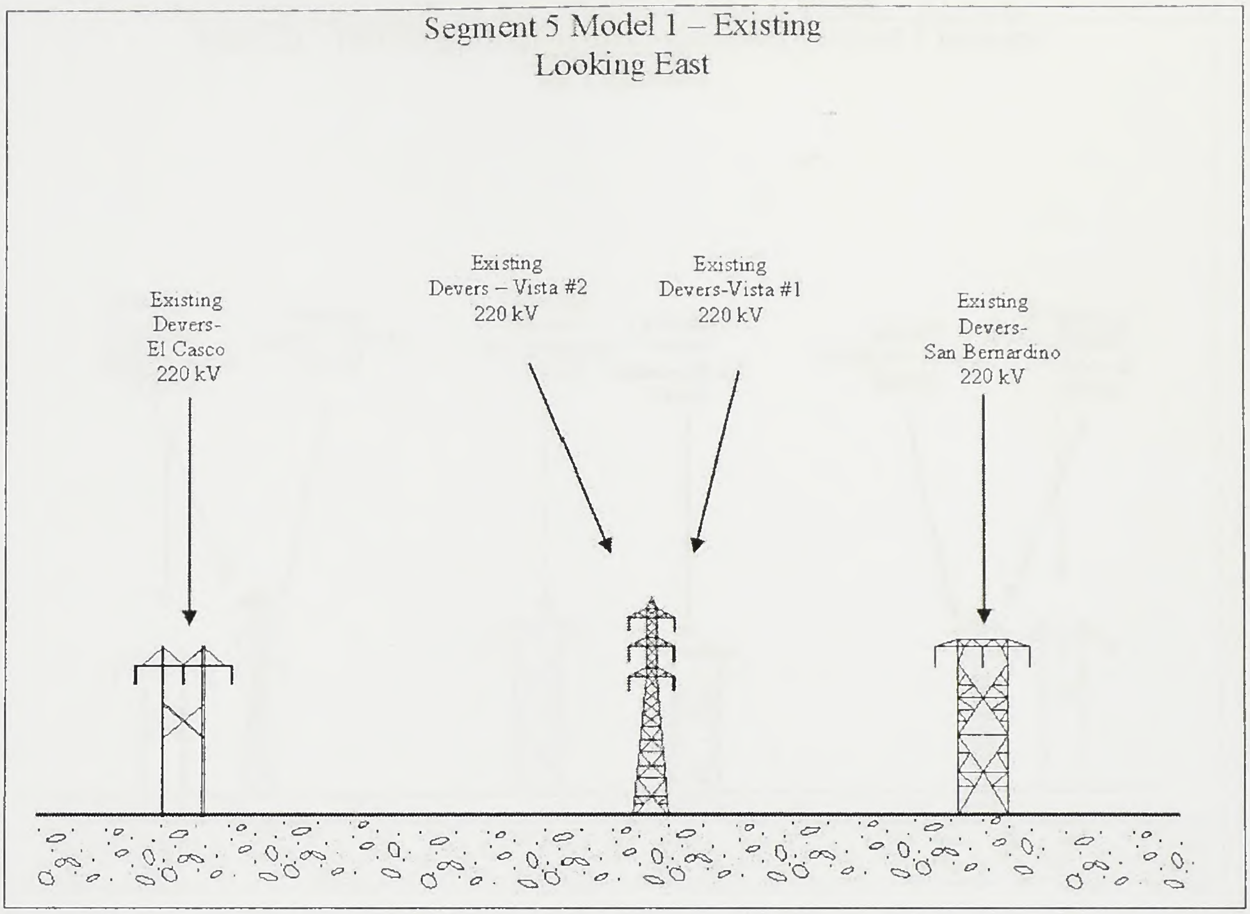
Segment 4 Model 1– Proposed
Looking East

Segment 4 Model 2 – Existing
Looking East



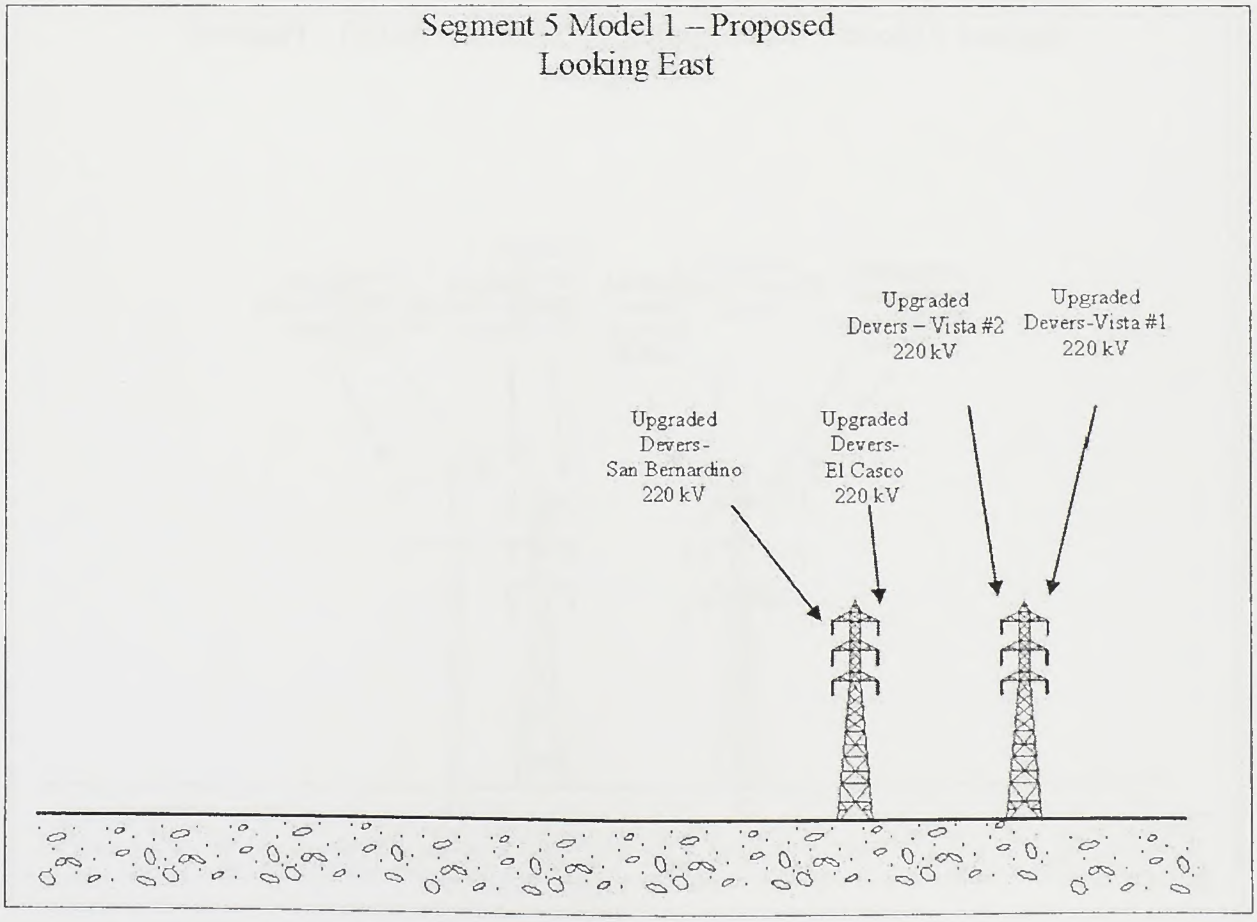
Segment 4 Model 2 – Proposed
Looking East





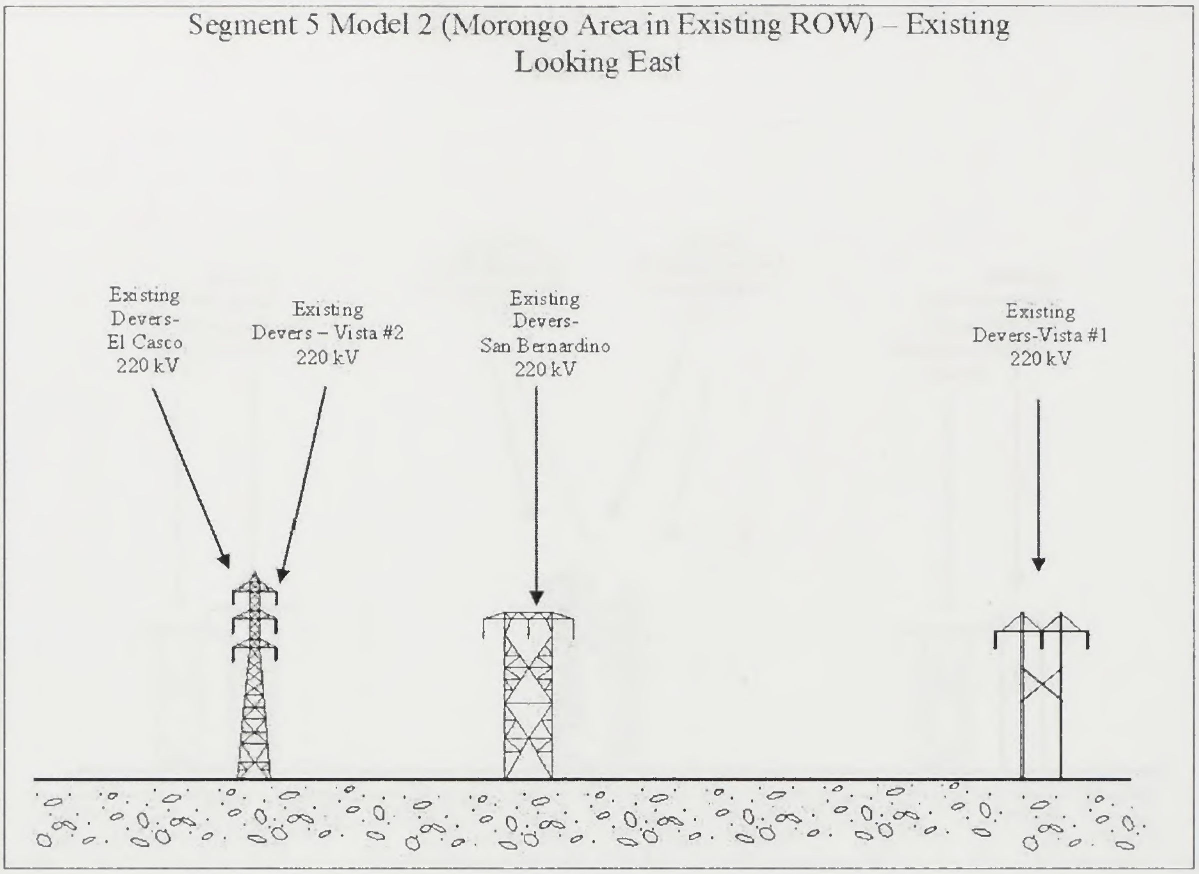
Segment 5 Model 1 – Existing
Looking East

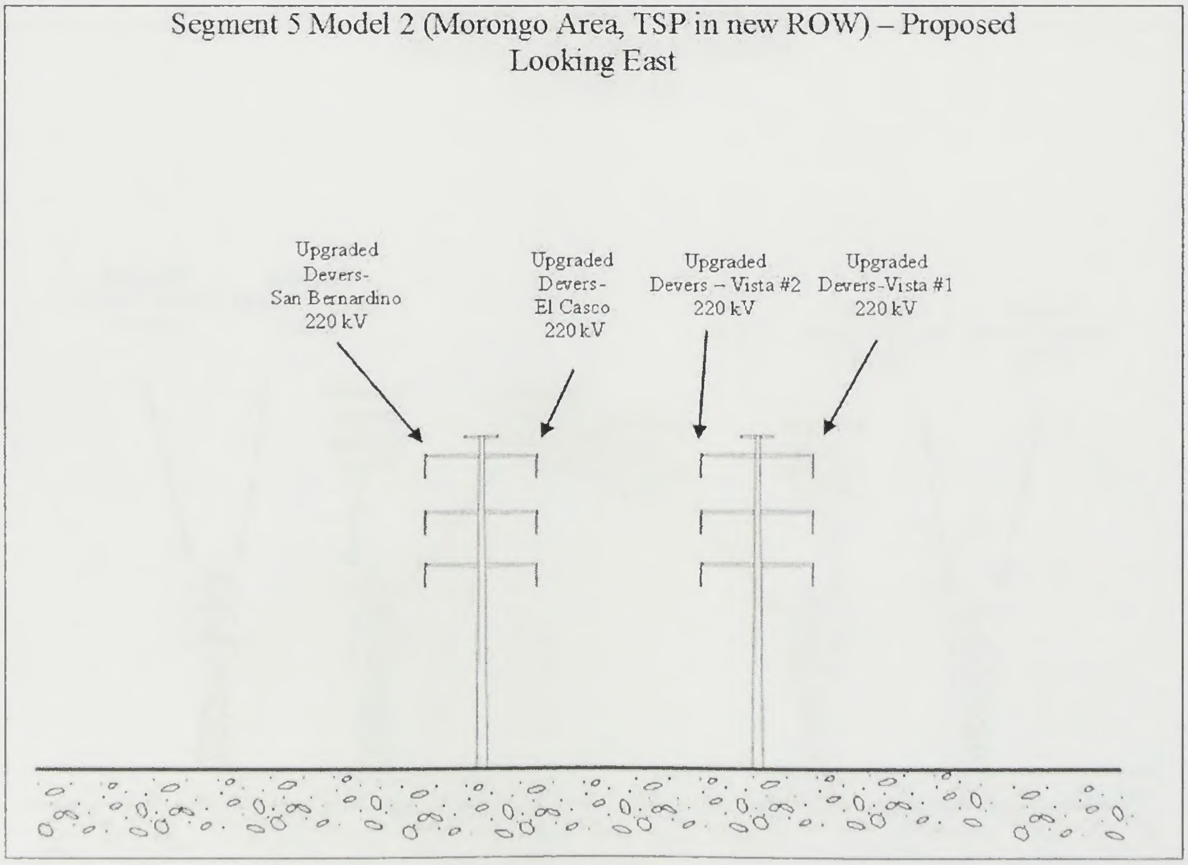
Existing Devers-El Casco 220 kV
Existing Devers – Vista #2 220 kV
Existing Devers-Vista #1 220 kV
Existing Devers-San Bernardino 220 kV



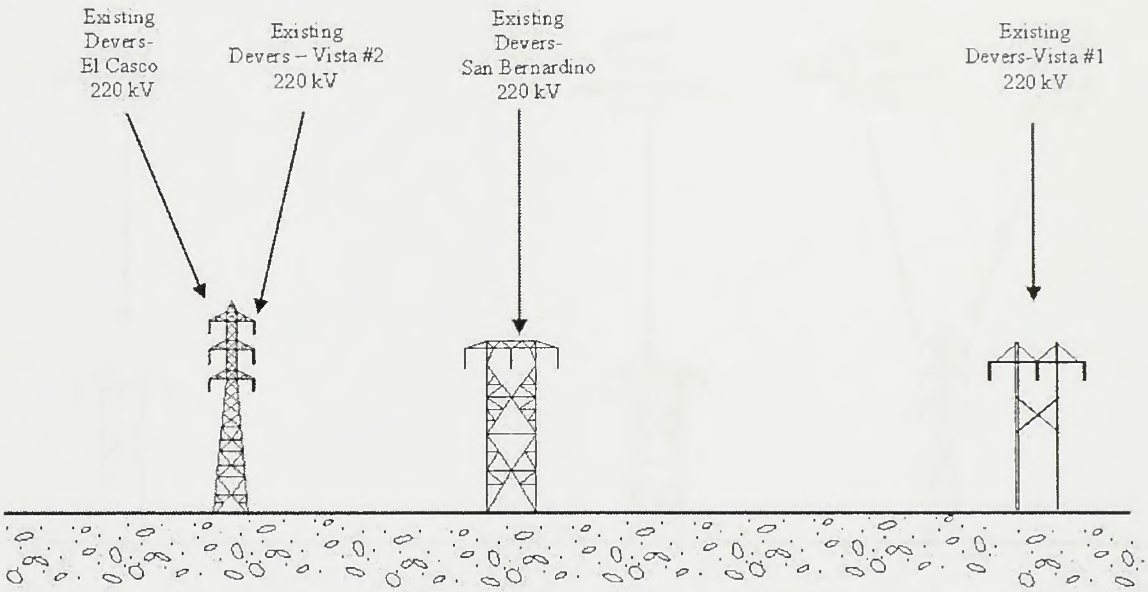
Segment 5 Model 1 – Proposed
Looking East

Upgraded Devers – Vista #2 220 kV
Upgraded Devers-Vista #1 220 kV
Upgraded Devers-San Bernardino 220 kV
Upgraded Devers-El Casco 220 kV

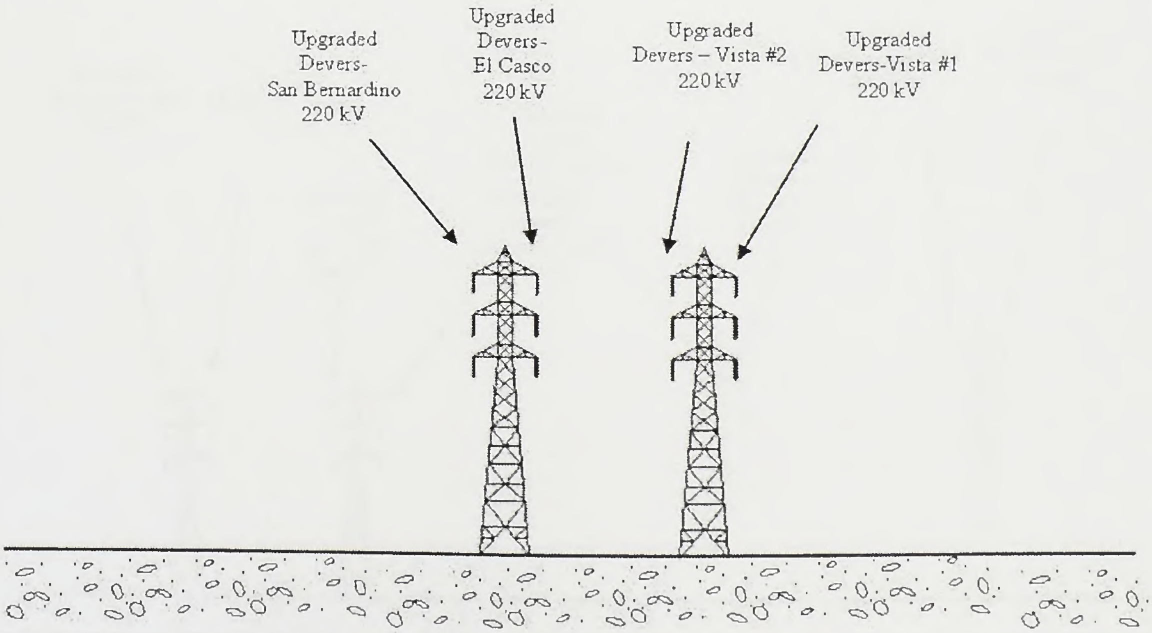

Segment 5 Model 2 (Morongo Area in Existing ROW) – Existing
Looking East

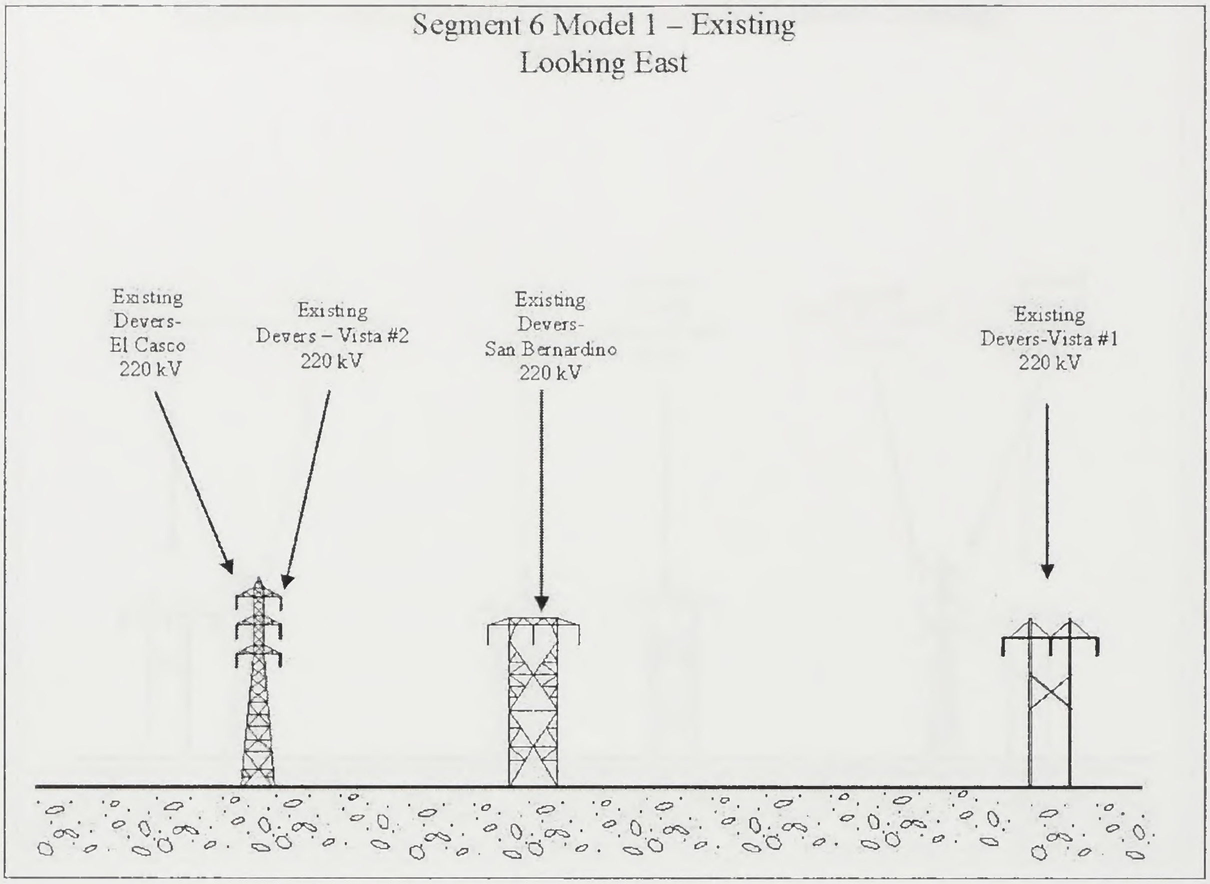

Segment 5 Model 2 (Morongo Area, TSP in new ROW) – Proposed
Looking East

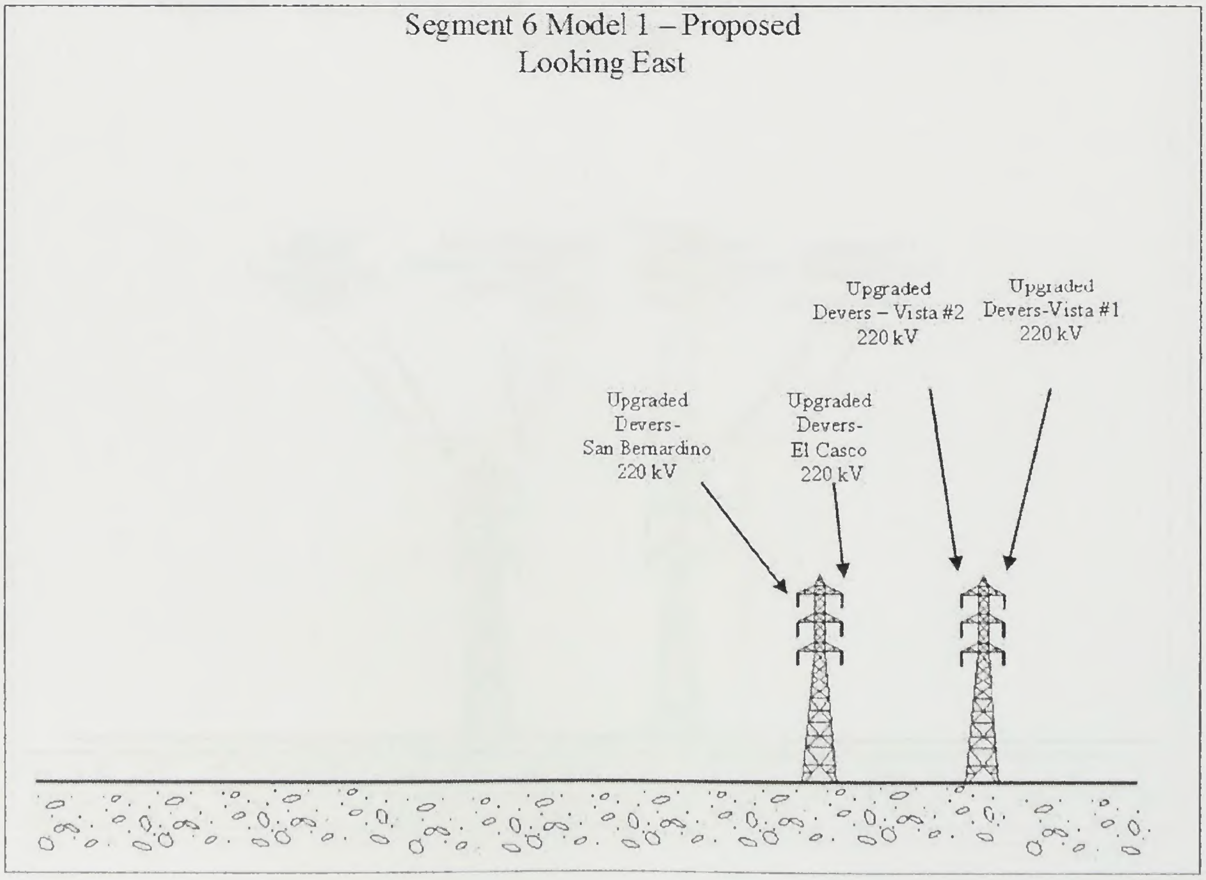
Segment 5 Model 3 (Morongo Area in Existing ROW) – Existing
Looking East

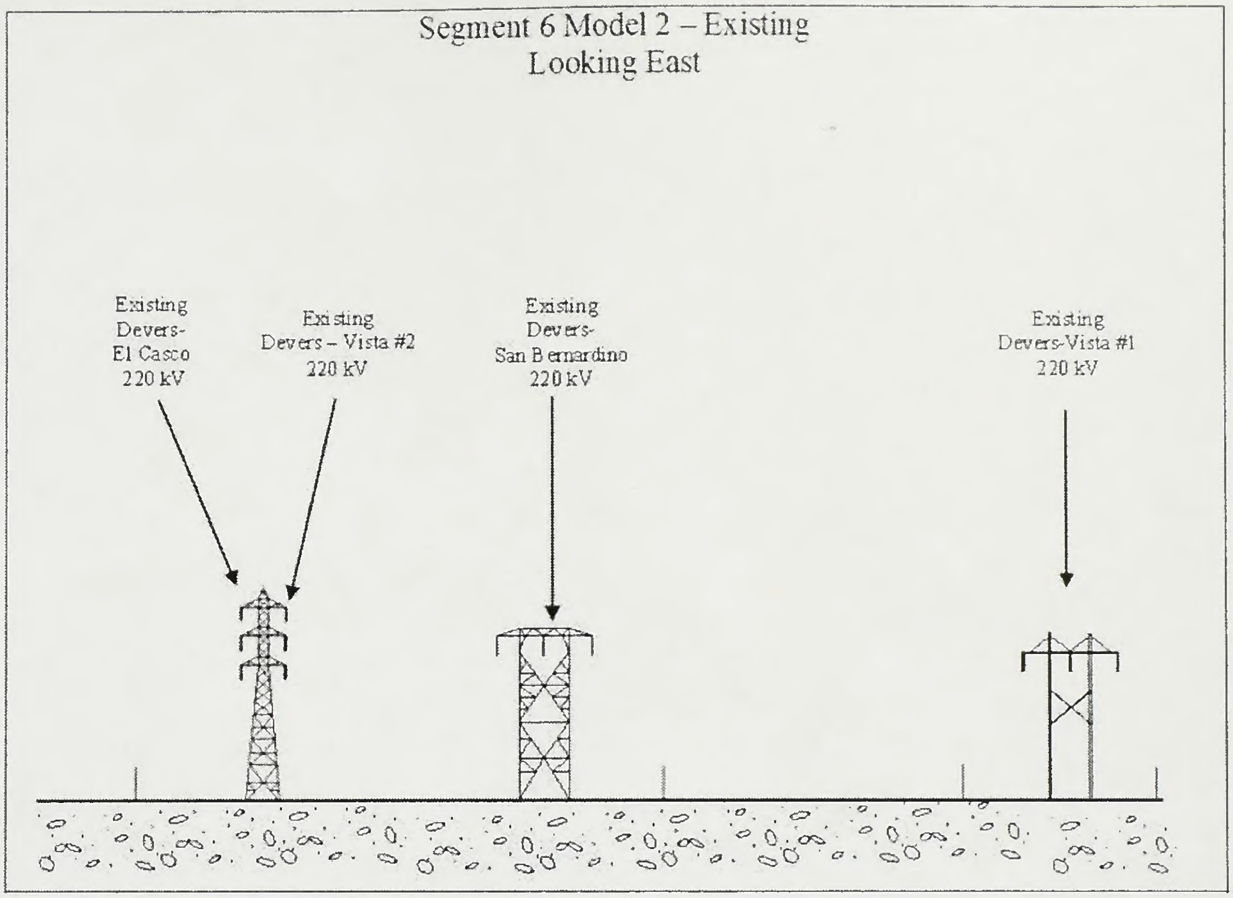


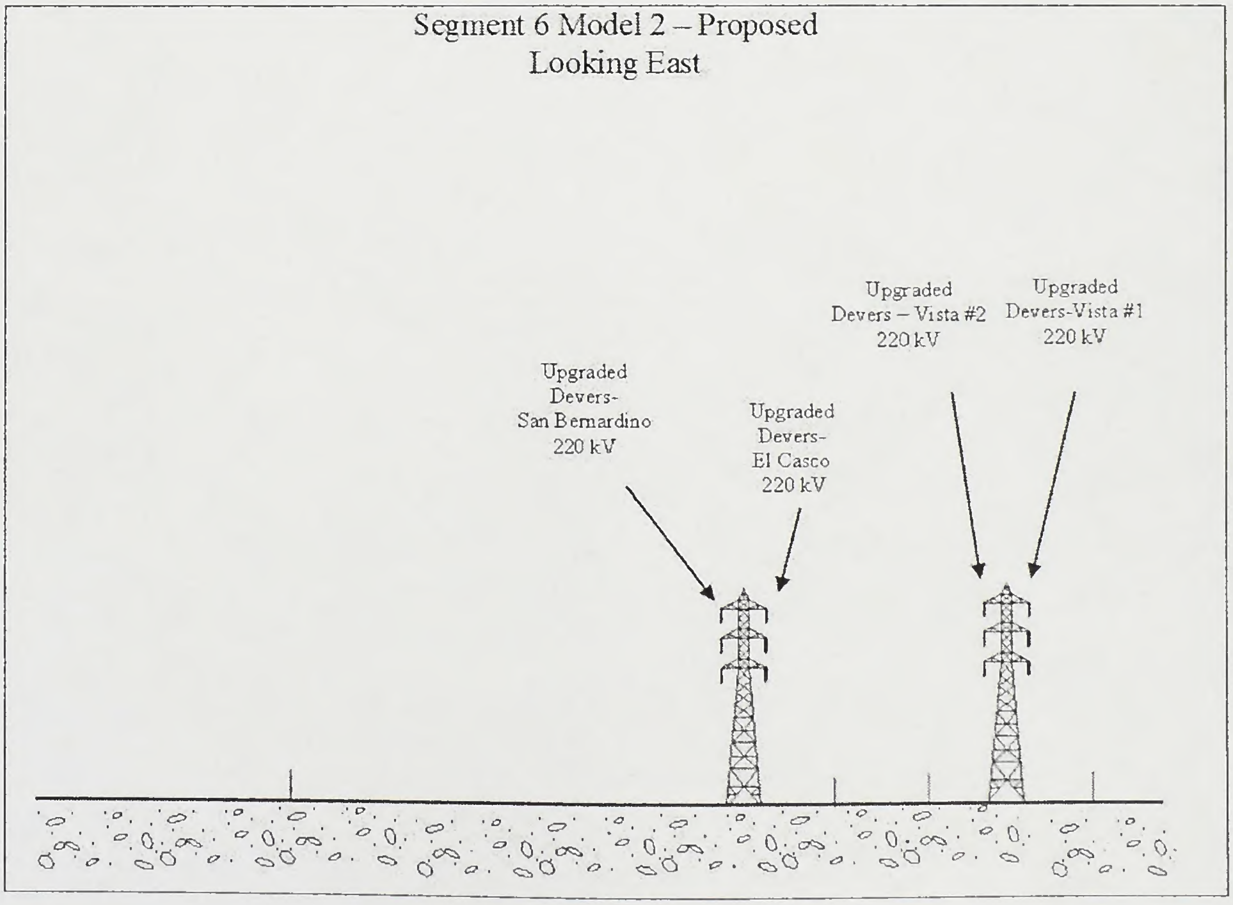
Segment 5 Model 3 (Morongo Area, LST in Existing ROW) – Proposed
Looking East

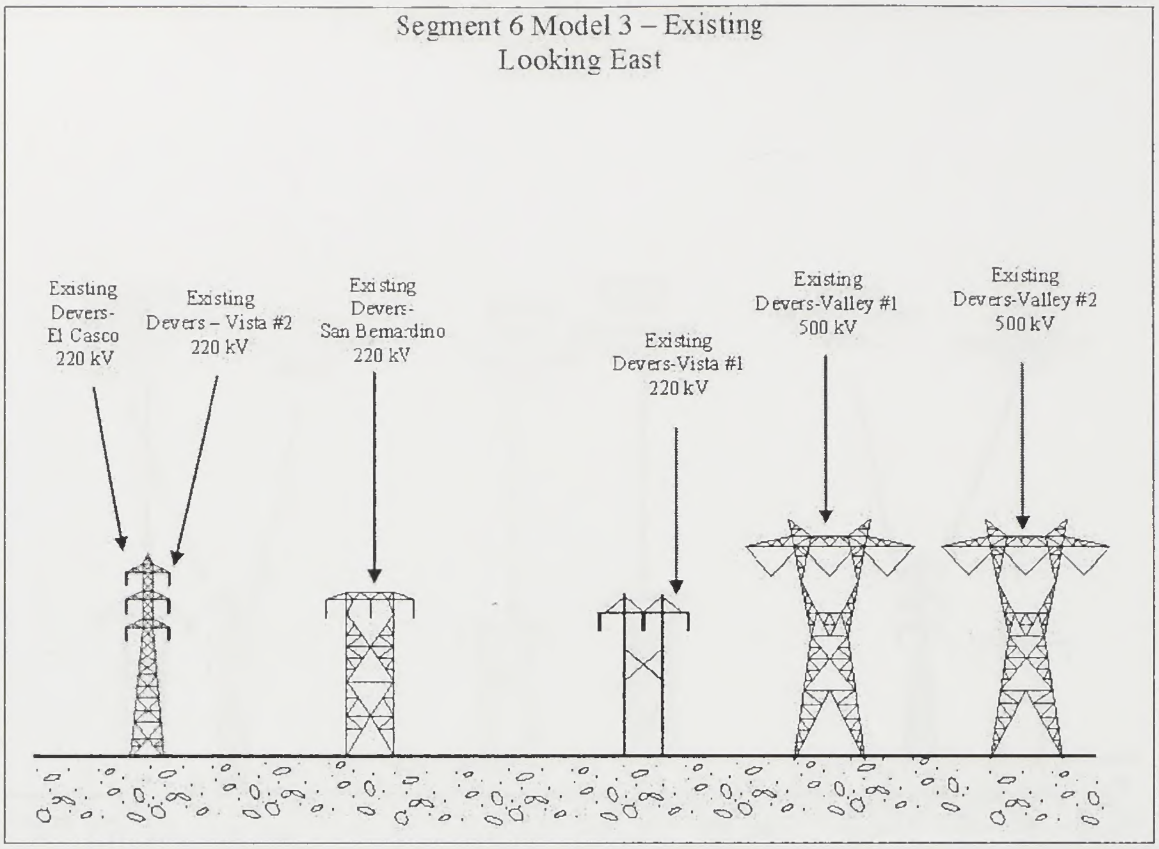



Segment 6 Model 1 – Existing
Looking East
Existing Devers-El Casco 220 kV
Existing Devers – Vista #2 220 kV
Existing Devers-San Bernardino 220 kV
Existing Devers-Vista #1 220 kV


Segment 6 Model 1 – Proposed
Looking East
Upgraded Devers – Vista #2 220 kV
Upgraded Devers-Vista #1 220 kV
Upgraded Devers-San Bernardino 220 kV
Upgraded Devers-El Casco 220 kV

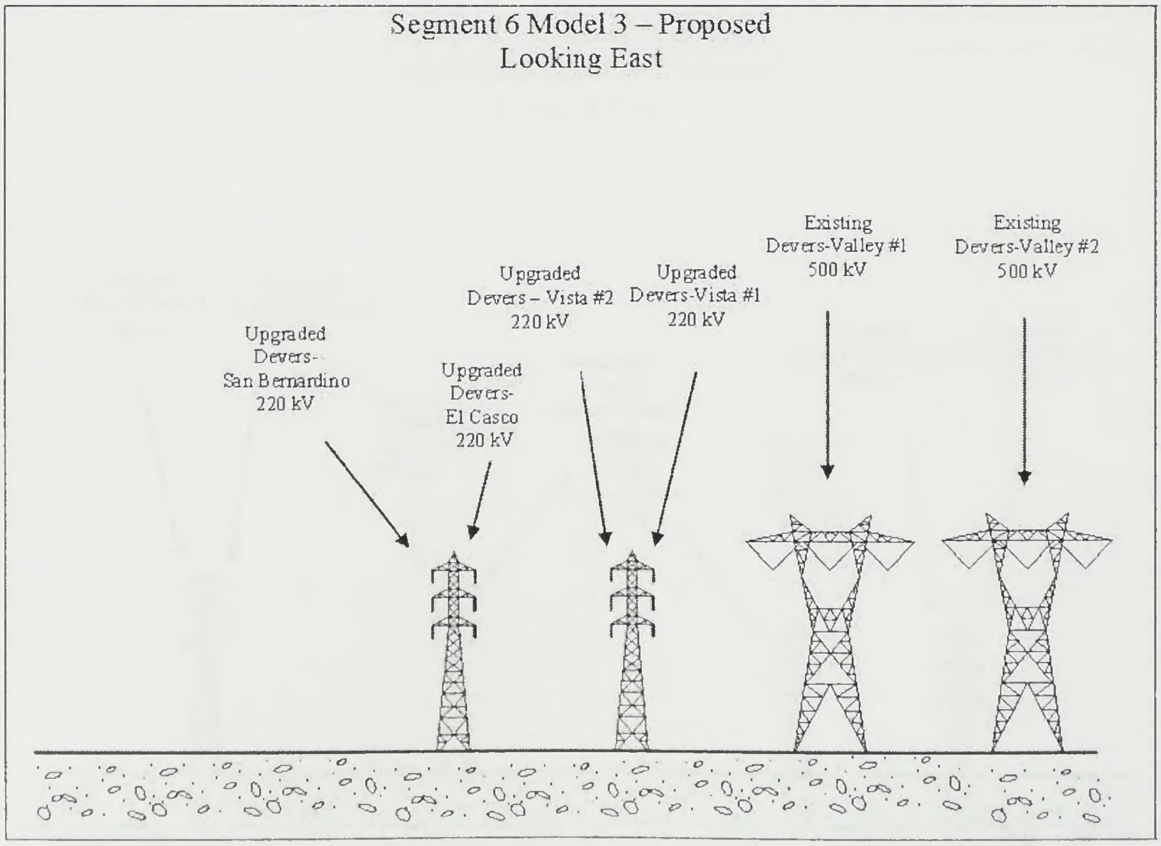

Segment 6 Model 2 – Existing
Looking East
Existing Devers-El Casco 220 kV
Existing Devers – Vista #2 220 kV
Existing Devers-San Bernardino 220 kV
Existing Devers-Vista #1 220 kV


Segment 6 Model 2 – Proposed
Looking East
Upgraded Devers-San Bernardino 220 kV
Upgraded Devers-El Casco 220 kV
Upgraded Devers – Vista #2 220 kV
Upgraded Devers-Vista #1 220 kV



Segment 6 Model 3 – Existing
Looking East

Existing Devers-El Casco 220 kV
Existing Devers – Vista #2 220 kV
Existing Devers-San Bernardino 220 kV
Existing Devers-Vista #1 220 kV
Existing Devers-Valley #1 500 kV
Existing Devers-Valley #2 500 kV



Segment 6 Model 3 – Proposed
Looking East

Upgraded Devers-San Bernardino 220 kV
Upgraded Devers-El Casco 220 kV
Upgraded Devers – Vista #2 220 kV
Upgraded Devers-Vista #1 220 kV
Existing Devers-Valley #1 500 kV
Existing Devers-Valley #2 500 kV

Appendix 5. Alternatives Screening Report

Appendix 5

Alternatives Screening Report

Attachment 1 – Phased Build Alternative Supporting Data
Attachment 2 – Project Alternatives Assessment – A Power Flow Analysis
Attachment 3 – Existing Structures Design Review

Appendix 5, Attachment 1

Phased Build Alternative Supporting Data

Alternatives Screening Report

1. Introduction

1.1 Purpose of the Alternatives Screening Report

On October 25, 2013, Southern California Edison (SCE) submitted Application A.13-10-020 seeking a Certificate of Public Convenience and Necessity (CPCN) from the California Public Utilities Commission (CPUC) for the West of Devers (WOD) Upgrade Project (Proposed Project). Because the proposed transmission line would cross approximately 3.5 miles of federal land managed by the Bureau of Land Management (BLM), the project would also require a Right-of-Way (ROW) Grant from the BLM for the portion of the project across BLM land. The Proposed Project is described in detail in Section B of the EIR/EIS. This document describes the alternatives screening analysis that has been conducted for the Proposed Project, supplementing the information presented in Section C of the EIR/EIS.

Alternatives to the Proposed Project were suggested (1) by SCE as part of the Proponent's Environmental Assessment (PEA), (2) by the EIR/EIS team based on identification of potentially significant environmental impacts, in past environmental documents in the proposed corridor, and (3) by public agencies and the general public during the two public scoping periods (May to July 2014). The alternatives screening analysis was completed in order to determine the range of alternatives that would be carried forward for analysis in the EIR/EIS. This report documents: (1) the range of alternatives that have been suggested and evaluated; (2) the approach and methods used by the CPUC and BLM in screening the feasibility of these alternatives according to guidelines established under the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA); and (3) the results of the alternatives screening process (i.e., which alternatives to analyze in the EIR/EIS).

This alternatives Screening Report (Appendix 5 to the EIR/EIS) provides the basis and rationale for why an alternative has been carried forward for full evaluation in the EIR/EIS. For each alternative that was eliminated from further consideration, this document explains in detail the rationale for elimination.

No Project / No Action Alternative. Full consideration of a No Project or No Action Alternative is also required by CEQA and NEPA, as separately defined in Section C.6 of the EIR/EIS.

1.2 Background

1.2.1 Previously Proposed Devers–Palo Verde No. 2 Transmission Project

On April 11, 2005, SCE submitted an application (A.05-04-015) for a CPCN for a 500 kV interstate transmission line project, the Devers–Palo Verde No. 2 (DPV2). The project included three major components:

- A 500 kV line from the Palo Verde area in Arizona to a new substation near Blythe, California;
- A 500 kV line from the Blythe area substation to the Devers Substation; and
- Upgrades to SCE's lower voltage transmission system west of the Devers Substation.

The CPUC approved the DPV2 Project in January 2007 in Decision D.07-01-040, and a CPCN was issued. The approved Project included the SCE proposal except for the West of Devers upgrades, which were replaced by the Devers to Valley 500 kV No. 2 line. On May 14, 2008, SCE filed a Petition for Modification (PFM) of the CPCN approved per Decision D.07-01-040. In the PFM, SCE requested that the CPUC authorize SCE to construct DPV2 transmission facilities in only the California portion of DPV2 and the

Midpoint Substation (later re-named as the Colorado River Substation) near Blythe, California. The CPUC approved SCE's PFM on November 20, 2009 in Decision D.09-11-007. The BLM issued its Record of Decision approving the project on July 19, 2011.

The West of Devers upgrade components as proposed by SCE in 2005 could not be approved by the CPUC and BLM because by the time of agency decisions (January 2007), the Morongo Band of Mission Indians had not reached an agreement with SCE on terms of the right-of-way (ROW) renewal for the nearly 6 miles of the corridor that crosses tribal land. Therefore, the Devers Substation to Valley Substation (Devers-Valley No. 2 500 kV) alternative route was approved instead. Although the West of Devers upgrade components reviewed in 2006 were infeasible to build at the time, the 2006 Final EIR/EIS for DPV2 found the proposal to be environmentally superior to the Devers-Valley No. 2 500 kV alternative that was built and is now in use.

1.3 Summary of the Proposed Project

The Proposed West of Devers Upgrade Project is described in detail in Section B of this EIR/EIS. The Proposed Project would upgrade the existing WOD system in a number of ways. The upgrades to the existing 220 kV transmission lines would be the most visible components of the project. These upgrades would occur on approximately 30 miles of the Devers–El Casco line, 14 miles of the El Casco–San Bernardino line, 43 miles of the Devers–San Bernardino line, 45 miles of the Devers-Vista No. 1 and No. 2 lines, 3.5 miles of the Etiwanda–San Bernardino line, and 3.5 miles of the San Bernardino–Vista line.

The proposed transmission line elements have been divided into the following six segments, by milepost (MP):

- Segment 1 – San Bernardino (MP SB0 to MP SB3.5)
- Segment 2 – Colton, Grand Terrace and Loma Linda (MP 0 to MP 5.2)
- Segment 3 – San Timoteo Canyon (MP 5.2 to MP 15.2)
- Segment 4 – Beaumont and Banning (MP 15.2 to MP 27.4)
- Segment 5 – Morongo Tribal Lands and Surrounding Areas (MP 27.4 to MP 36.9)
- Segment 6 – Whitewater and Devers (MP 36.9 to MP 45)

The Proposed Project would primarily be constructed on a combination of 220 kV double-circuit lattice steel towers (LSTs), double-circuit tubular steel poles (TSPs), and single-circuit TSPs. Each of the proposed 220 kV transmission lines would consist of overhead wires (conductors), which form three electrical phases. Each phase would consist of double-bundled (bundle of two conductors for each phase) 1590 kcmil (one thousand circular mils) aluminum conductor steel reinforced (ACSR) conductor, which is made of aluminum strands with internal steel reinforcement and would have a non-specular finish.

Construction of the Proposed Project would upgrade the existing 220 kV transmission lines between Devers, El Casco, San Bernardino, and Vista Substations to increase the system transfer capacity from 1,600 MW to 4,800 MW (SCE, 2014a), which includes a scheme to trip off-line up to 1,400 MW of generation during certain emergency conditions (SCE Response to CPUC Data Request ALT-11). The power flow capability of each of the four proposed 220 kV circuits under normal conditions would be 1,292 MW (SCE Response to CPUC Data Request ALT-11) resulting in a total capability for the corridor with all lines in service under normal conditions of 5,168 MW combined.

In addition, the Proposed Project would require a series of changes to substations, subtransmission lines, distribution lines, and telecommunications facilities. These changes include:

- Upgrade substation equipment at Devers, El Casco, Etiwanda, San Bernardino, and Vista Substations to accommodate increased power transfer on 220 kV lines;
- Upgrade substation equipment at Timoteo and Tennessee Substations to accommodate 66 kV subtransmission line relocations;
- Remove and relocate 2 miles of existing 66 kV subtransmission lines;
- Remove and relocate 4 miles of existing 12 kV distribution lines; and
- Install telecommunication lines and equipment for the protection, monitoring, and control of transmission lines and substation equipment.

2. Description of Alternatives Evaluation Process

The range of alternatives in this report was identified through the CEQA/NEPA scoping process, and through supplemental studies and consultations that were conducted during the course of this analysis. The range of alternatives considered in the screening analysis encompasses:

- Alternatives identified by SCE in the October 2013 PEA for the Proposed Project;
- Alternatives identified in 2006 Final EIR/EIS for the West of Devers portion of DPV2;
- Alternatives identified during the public scoping process held in 2014 in accordance with CEQA and NEPA requirements; and
- Alternatives identified by the EIR/EIS team as a result of the independent review of the Proposed Project impacts and meetings with affected agencies and interested parties.

2.1 Alternatives Screening Methodology

The evaluation of the alternatives used a screening process that consisted of three steps:

Step 1: Clearly define each alternative to allow comparative evaluation

Step 2: Evaluate each alternative in comparison with the Proposed Project, using CEQA/NEPA criteria (defined below)

Step 3: Based on the results of Step 2, determine the suitability of the each alternative for full analysis in the EIR/EIS. If the alternative is unsuitable, eliminate it from further consideration.

2.2 CEQA and NEPA Requirements for Alternatives

After completion of the steps defined above, the advantages and disadvantages of the alternatives are carefully weighed with respect to CEQA and NEPA criteria for consideration of alternatives. Both CEQA and NEPA provide guidance on selecting a reasonable range of alternatives for evaluation in an EIR and EIS and the requirements are similar. This alternatives screening and evaluation process satisfies both State and federal requirements. The CEQA and NEPA requirements for selection of alternatives are described below.

2.2.1 CEQA

An important aspect of EIR preparation is the identification and assessment of reasonable alternatives that have the potential for avoiding or minimizing the impacts of a Proposed Project. The State CEQA Guidelines require consideration of the No Project Alternative (Section 15126.6(e)) and selection of a range of reasonable alternatives (Section 15126.6(d)). The EIR must adequately assess these alternatives to allow for a comparative analysis for consideration by decisionmakers. The State CEQA Guidelines (Section 15126.6(a)) state that:

> *An EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation.*

In order to comply with CEQA's requirements, each alternative that has been suggested or developed for this project has been evaluated in three ways:

- Does the alternative accomplish all or most of the basic project objectives?
- Is the alternative feasible (from site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries and whether the proponent can reasonably acquire, control, or otherwise have access to the alternative site standpoints)?
- Does the alternative avoid or substantially lessen any significant effects of the Proposed Project (including consideration of whether the alternative itself could create significant effects potentially greater than those of the Proposed Project)?

The approach to each of these questions is described in more detail in the following sections.

2.2.1.1 Consistency with Project Objectives

The State CEQA Guidelines require the consideration of alternatives capable of eliminating or reducing significant environmental effects even though they may "impede to some degree the attainment of project objectives" (Section 15126.6(b)). Therefore, it is not required that each alternative meet all of SCE's objectives.

The October 2013 Proponent's Environmental Assessment (PEA) includes the following six objectives stated by SCE for the Proposed Project:

- Allow SCE to meet its obligation to integrate and fully deliver the output of new generation projects located in the Blythe and Desert Center areas that have requested to interconnect to the electrical transmission grid.
- Consistent with prudent transmission planning, maximize the use of existing transmission line rights-of-way to the extent practicable.
- Meet project need while minimizing environmental impacts.
- Facilitate progress toward achieving California's Renewables Portfolio Standard (RPS) goals in a timely and cost-effective manner by SCE and other California utilities.

- Comply with applicable Reliability Standards and Regional Business Practices developed by the North American Electric Reliability Corporation (NERC), the Western Electricity Coordinating Council (WECC), and the CAISO; and design and construct the project in conformance with SCE's approved engineering, design, and construction standards for substation, transmission, subtransmission, and distribution system projects.
- Construct facilities in a timely and cost-effective manner by minimizing service interruptions to the extent practicable.

The EIR/EIS in Section A, Introduction, describes that the 6 objectives set forth by SCE above were considered by the CPUC and BLM. After consideration of the SCE information, the CPUC and BLM have identified the following 3 basic project objectives. The rationale for selecting each of these objectives is presented in Section A.2.3.

- **Basic Project Objective 1:** to upgrade the WOD 220 kV transmission lines between Devers, El Casco, Vista, and San Bernardino Substations to increase system deliverability by at least 2,200 MW.
- **Basic Project Objective 2:** to support achievement of State and federal renewable energy goals.
- **Basic Project Objective 3:** to maximize the availability of remaining space in the corridor to the extent practicable, so future use of the corridor for additional transmission line upgrades is not precluded.

2.2.1.2 Feasibility

The State CEQA Guidelines (Section 15364) define feasibility as:

> *...capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.*

The alternatives screening analysis is largely governed by what CEQA terms the "rule of reason," meaning that the analysis should remain focused, not on every possible eventuality, but rather on the alternatives necessary to permit a reasoned choice. Furthermore, of the alternatives identified, the EIR is expected to fully analyze those alternatives that are feasible, while still meeting most of the project objectives.

According to the State CEQA Guidelines (Section 15126.6(f)(1)), among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or other regulatory limitations, jurisdictional boundaries, and proponent's control over alternative sites. For the screening analysis, the feasibility of potential alternatives was assessed taking the following factors into consideration:

- **Economic Feasibility.** Is the alternative so costly that implementation would be prohibitive? The State CEQA Guidelines require consideration of alternatives capable of eliminating or reducing significant environmental effects even though they may "impede to some degree the attainment of the project objectives, or would be more costly" (Guidelines Section 15126.6(b)). The Court of Appeals added in *Goleta Valley v. Board of Supervisors* (2nd Dist. 1988) 197 Cal.App.3d, p. 1181 (see also *Kings County Farm Bureau v. City of Hanford* (5th Dist. 1990) 221 Cal.App.3d 692, 736 [270 Cal. Rptr. 650]): "[t]he fact that an alternative may be more expensive or less profitable is not sufficient to show that the alternative is financially infeasible. What is required is evidence that the additional costs or lost profitability are *sufficiently severe* as to render it *impractical* to proceed with project."
- **Environmental Feasibility.** Would implementation of the alternative cause substantially greater environmental damage than the Proposed Project, thereby making the alternative clearly inferior from an

environmental standpoint? This issue is primarily addressed in terms of the alternative's potential to eliminate significant effects of the Proposed Project, as discussed in Section 2.2.1.3 below.

- **Legal Feasibility.** Does the alternative have the potential to avoid lands that have legal protection that may prohibit or substantially limit the feasibility of permitting a high-voltage transmission line?
- **Regulatory Feasibility.** Do regulatory restrictions substantially limit the likelihood of successful permitting of a high-voltage transmission line? Is the alternative consistent with regulatory standards for transmission system design, operation, and maintenance?

  Lands that are afforded legal protections that would prohibit the construction of the project, or require an act of Congress for permitting, are considered less feasible locations for the project. These land use designations include wilderness areas, wilderness study areas, restricted military bases, airports and Indian reservations. Information on potential legal constraints of each alternative has been compiled from laws, regulations, and local jurisdictions, as well as a review of federal, State, and local agency land management plans and policies.
- **Social Feasibility.** Would the alternative cause significant damage to the socioeconomic structure of the community and be inconsistent with important community values and needs? Similar to the environmental feasibility addressed above, this issue pertains to the alternative's potential to eliminate adverse economic and social effects of a physical change in the environment caused by the Proposed Project.
- **Technical Feasibility.** Is the alternative feasible from a technological perspective, considering available technology? Are there any construction, operation, or maintenance constraints that cannot be overcome?

2.2.1.3 Potential to Eliminate Significant Environmental Effects

A key CEQA requirement for an alternative is that it must have the potential to "avoid or substantially lessen any of the significant effects of the project" (State CEQA Guidelines Section 15126.6(a)). If an alternative is identified that clearly does not have the potential to provide an overall environmental advantage as compared to the Proposed Project, it is usually eliminated from further consideration.

At the screening stage, it is not possible to evaluate all of the impacts of the alternatives in comparison to the Proposed Project with absolute certainty, nor is it possible to quantify impacts. However, it is possible to identify elements of an alternative that are likely to be the sources of impact and to relate them, to the extent possible, to general conditions in the project area.

As of early 2015, the following significant impacts from the Proposed Project have been identified:

- Long-term visual impacts to residences in Segments 4, 5, and 6 of the Proposed Project.
- Visual contrast due to vegetation removal.
- Noise disturbance to sensitive receptors and/or violation of local rules, standards, and/or ordinances during construction.
- Construction-generated dust and exhaust emissions of criteria pollutants.
- Changes to unknown buried prehistoric and historical archaeological sites or buried Native American human remains.

This impact summary was prepared prior to completion of the EIR/EIS analysis, so it may not be complete in comparison to the detailed analysis now presented in Section D of the EIR/EIS. However, the impacts are representative of those resulting from preliminary EIR/EIS preparation and were therefore used to determine whether an alternative met this CEQA requirement.

2.2.2 NEPA

According to the Council on Environmental Quality's (CEQ) NEPA Regulations (40 C.F.R. 1502.14), an EIS must present the environmental impacts of the proposed action and alternatives in comparative form, defining the issues and providing a clear basis for choice by decisionmakers and the public. The alternatives section shall:

(a) Rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated.

(b) Devote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative merits.

(c) Include reasonable alternatives not within the jurisdiction of the lead agency.

(d) Include the alternative of no action.

(e) Identify the agency's preferred alternative or alternatives, if one or more exists, in the draft statement and identify such alternative in the final statement unless another law prohibits the expression of such a preference.

(f) Include appropriate mitigation measures not already included in the proposed action or alternatives.

The CEQ has stated that reasonable alternatives include those that are practical or feasible from the technical and economic standpoint and using common sense rather than simply desirable from the standpoint of the applicant (CEQ, 1987).

In addition to the CEQ NEPA regulations, CEQ has issued a variety of general guidance memoranda and reports that concern the implementation of NEPA. One of the most frequently cited resources for NEPA practice is CEQ's *Forty Most Asked Questions Concerning CEQ's NEPA Regulations* (Forty Questions). Although a reviewing federal court does not always give the Forty Questions the same deference as it does the CEQ NEPA Regulations, in some situations the Forty Questions have been persuasive to the judiciary. For example in one decision, a federal court relied heavily on one of the Forty Questions in interpreting the treatment of alternatives under NEPA [*American Rivers et al. v. Federal Energy Regulatory Commission*, 187 F.3d 1007 (9th Cir. 1999)] (Bass et al., 2001).

In general, alternatives are discussed in Forty Questions Nos. 1 through 7. Question No. 5b asks if the analysis of the "proposed action" in an EIS is to be treated differently than the analysis of alternatives. The response states:

> *The degree of analysis devoted to each alternative in the EIS is to be substantially similar to that devoted to the "proposed action." Section 1502.14 is titled "Alternatives, including the proposed action" to reflect such comparable treatment. Section 1502.14(b) specifically requires "substantial treatment" in the EIS of each alternative including the proposed action. This regulation does not dictate an amount of information to be provided, but rather, prescribes a level of treatment, which may in turn require varying amounts of information, to enable a reviewer to evaluate and compare alternatives.*

2.2.2.1 Consistency with Purpose and Need

CEQ NEPA Regulations (40 C.F.R. 1502.13) require a statement to "briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action." In addition to SCE's project objectives listed in Section 2.2.1.1 above, the October 2013 PEA provides a full chapter on the Purpose and Need (PEA Chapter 1.0) for the West of Devers Upgrade Project, including the following six statements by SCE:

- The Proposed Project is Needed to Integrate and Interconnect Generation Resources within the Blythe and Desert Center Areas.
- The Proposed Project is Needed to Comply With Executed Large Generator Interconnection Agreements (LGIAs).
- The Proposed Project is Needed to Support Integration of Generation with Executed Power Purchase Agreements (PPAs).
- The Proposed Project is Needed to Facilitate Integration of Renewable Generation Resource Being Developed in the Coachella Valley Area.
- The Proposed Project is Needed to Comply with Reliability Standards.
- The Proposed Project Facilitates Progress Toward California's RPS Goals.

2.2.2.2 Feasibility

The environmental consequences of the alternatives, including the proposed action, are to be discussed in the EIR/EIS in accordance with CEQ NEPA Regulations (40 C.F.R. 1502.16). The discussion shall include "[p]ossible conflicts between the proposed action and the objectives of Federal, regional, State, and local (and in the case of a reservation, Indian tribe) land use plans, policies and controls for the area concerned." Other feasibility factors to be considered may include cost, logistics, technology, and social, environmental, and legal factors (Bass et al., 2001). The feasibility factors are substantially the same as described for CEQA in Section 2.2.1.2, above.

2.2.3 Summary of CEQA and NEPA Screening Methodology

Unlike CEQA's requirements, NEPA does not require screening of alternatives based on their potential to avoid or lessen significant environmental effects. However, to assure that the alternatives considered in the EIR/EIS would meet the requirements of both CEQA and NEPA, the stricter requirements of CEQA have been applied as the screening methodology. As such, a reasonable range of alternatives has been considered and evaluated as to whether or not the alternatives meet (1) most of the project objectives/purpose and need, (2) are considered feasible, and (3) would avoid or substantially lessen any significant effects of the Proposed Project.

2.3 Other Considerations for Alternatives

The final project decision by the CPUC will be guided by the Public Utilities Code in addition to the requirements of CEQA. The Public Utilities Code in Section 1002 states that:

> *Section 1002. (a) The commission, as a basis for granting any certificate pursuant to Section 1001 shall give consideration to the following factors:*
>
> *(1) Community values.*
>
> *(2) Recreational and park areas.*

> *(3) Historical and aesthetic values.*
>
> *(4) Influence on environment, except that in the case of any line, plant, or system or extension thereof located in another state which will be subject to environmental impact review pursuant to the National Environmental Policy Act of 1969 (Chapter 55 (commencing with Section 4321) of Title 42 of the United States Code) or similar state laws in the other state, the commission shall not consider influence on the environment unless any emissions or discharges therefrom would have a significant influence on the environment of this state.*

The CPUC will consider the "community values" as expressed in the CPUC's proceeding on the WOD-UP Project and in comments on the Draft EIR/EIS. The CPUC anticipates that the final decision will represent a reasonable balancing of the communities' interests, the need to protect environmental resources in the area, and the need for the project.

3. Overview of Alternatives Screening Results

3.1 Introduction

This section summarizes the determinations of the screening process. Alternatives found to meet the CEQA/NEPA alternatives screening criteria have been retained for full analysis in the EIR/EIS.

3.2 Alternatives Retained for Full Analysis in the EIR/EIS

The following three alternatives are retained for full analysis in this EIR/EIS; each is described in detail in Section 4 (Alternatives Retained for Analysis). Figure Ap.5-1 shows all alternatives retained for analysis.

- Tower Relocation Alternative
- Iowa Street 66 kV Underground Alternative
- Phased Build Alternative

3.3 Alternatives Eliminated After Detailed Screening

Eleven additional alternatives were considered for EIR/EIS analysis, but eliminated from detailed analysis through the process described in Section 2. These alternatives are listed below and described in detail in Section 5 of this appendix (Alternatives Eliminated). Figures Ap.5-2a (Route Alternatives Eliminated) and Ap.5-2b (System Alternatives Eliminated) shows the alternatives eliminated from EIR/EIS analysis after detailed screening.

- 500 kV Towers Alternative
- Segment 4 Underground Alternatives in Calimesa, Beaumont, and Banning
- Segment 5 Morongo Central Route Alternative (original PEA Proposed Route)
- Segment 5 Morongo Existing 220 kV Route Alternative (Existing ROW)
- East Banning–Morongo Alternative
- Devers-Beaumont 500 kV Alternative (SCE System Alternative 1)
- Red Bluff–Valley-Serrano 500 kV Alternative (SCE System Alternative 2)
- Reduced Build Alternative Option 1

- Reduced Build Alternative Option 2a
- Reduced Build Alternative Option 2b
- High-Performance Conductor Alternative

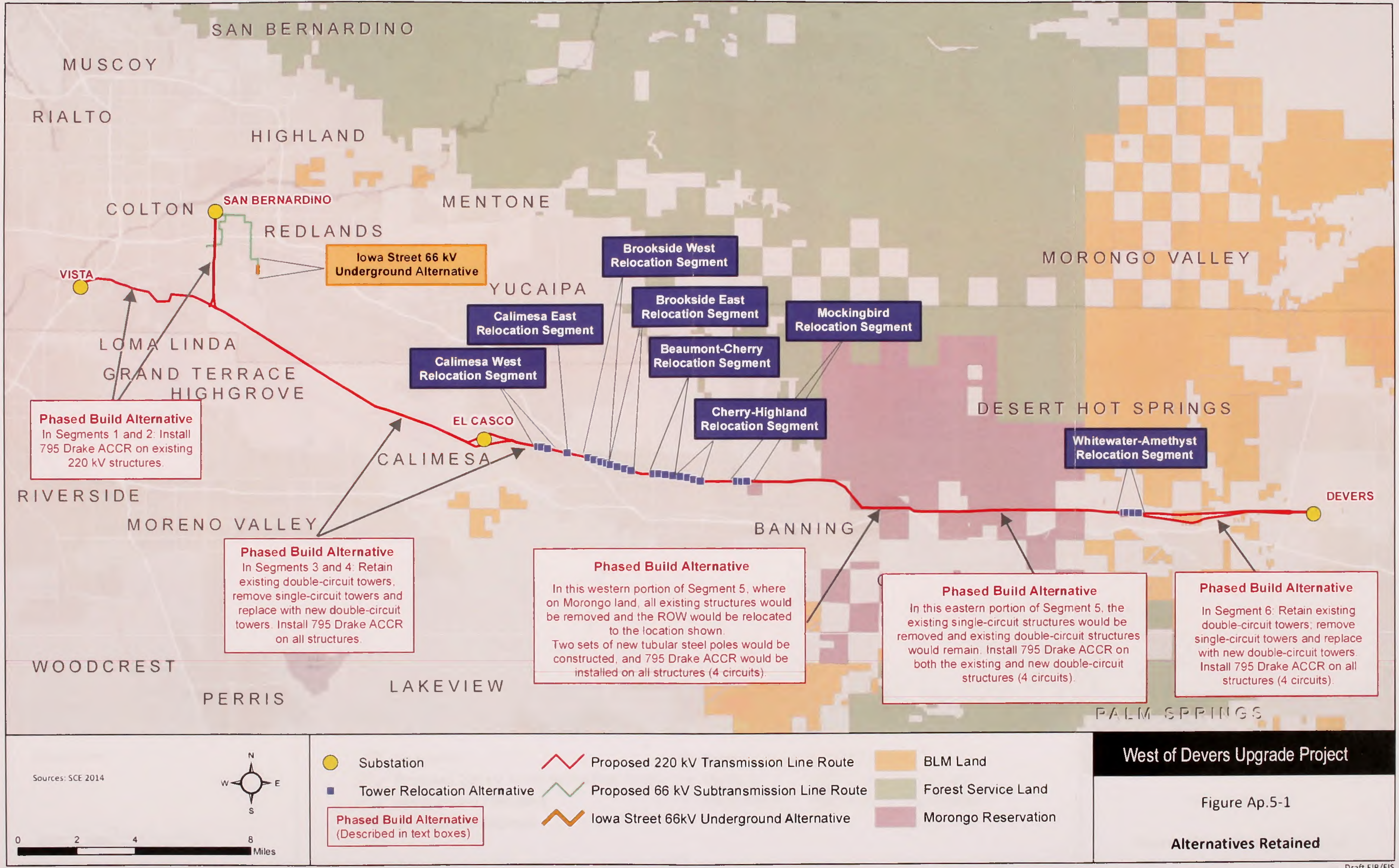
Two additional alternative concepts were considered, but not evaluated in the EIR/EIS because they clearly did not meet the alternatives screening criteria described in Section 2 (Description of Alternatives Evaluation Process), as described below and illustrated in Figure Ap.5-2c.

Segment 2 Underground Alternative: East of I-215. This 1.9-mile underground alternative was considered by the EIR/EIS team, because of the potential for replacement towers in the City of Colton to degrade views from residential properties in the City of Grand Terrace. The Segment 2 Underground Alternative would eliminate 1.5 miles of existing towers and 10 proposed and existing towers supporting the Devers-Vista No. 1 and No. 2 circuits just east of the overhead crossing of I-215 near Vista Substation and west of Reche Canyon Road. The underground line would be installed in Mount Vernon Avenue, East Washington Street, and Reche Canyon Road.

This alternative was not evaluated because during 2014, SCE revised its preliminary design to require only minor modifications of the specific towers in the most visible locations, rather than tower replacement. Therefore, the incremental visual change with the Proposed Project would be small and no significant impacts have been identified in this area. Therefore, development of an alternative in this area would not avoid or substantially lessen any significant effects of the Proposed Project (see Section 2.2, CEQA and NEPA Requirements for Alternatives).

Segment 2 Underground Alternative: East of Vista Substation. This 2.5-mile underground alternative would be similar to the Segment 2 Underground Alternative, except this option but would extend the underground segment to the west side of I-215 as a 800- to 1,200-foot horizontal directional drill to the base of the hill north-northeast of Vista Substation. The Segment 2 Underground Alternative would eliminate 2 miles of existing towers and 13 proposed and existing towers supporting the Devers-Vista No. 1 and No. 2 circuits from north-northeast of Vista Substation by Mike Thompson's RV Super Stores parking lot to west of Reche Canyon Road.

This alternative was not further considered because SCE revised its preliminary design to require only minor modifications of these towers, rather than tower replacement. As a result, the incremental visual change with the Proposed Project would be small and no significant and unmitigable impacts have been identified in this area.


SAN BERNARDINO
MUSCOY
RIALTO
HIGHLAND
COLTON
SAN BERNARDINO
MENTONE
REDLANDS
VISTA
YUCAIPA
LOMA LINDA
GRAND TERRACE
HIGHGROVE
EL CASCO
CALIMESA
RIVERSIDE
MORENO VALLEY
MORONGO VALLEY
DESERT HOT SPRINGS
BANNING
DEVERS
WOODCREST
PERRIS
LAKEVIEW
PALM SPRINGS
Iowa Street 66 kV Underground Alternative
Brookside West Relocation Segment
Brookside East Relocation Segment
Calimesa East Relocation Segment
Calimesa West Relocation Segment
Beaumont-Cherry Relocation Segment
Mockingbird Relocation Segment
Cherry-Highland Relocation Segment
Whitewater-Amethyst Relocation Segment
Sources: SCE 2014
N
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2
4
8
Miles

Phased Build Alternative
In Segments 1 and 2: Install 795 Drake ACCR on existing 220 kV structures.

Phased Build Alternative
In Segments 3 and 4: Retain existing double-circuit towers, remove single-circuit towers and replace with new double-circuit towers. Install 795 Drake ACCR on all structures.

Phased Build Alternative
In this western portion of Segment 5, where on Morongo land, all existing structures would be removed and the ROW would be relocated to the location shown.
Two sets of new tubular steel poles would be constructed, and 795 Drake ACCR would be installed on all structures (4 circuits).

Phased Build Alternative
In this eastern portion of Segment 5, the existing single-circuit structures would be removed and existing double-circuit structures would remain. Install 795 Drake ACCR on both the existing and new double-circuit structures (4 circuits).

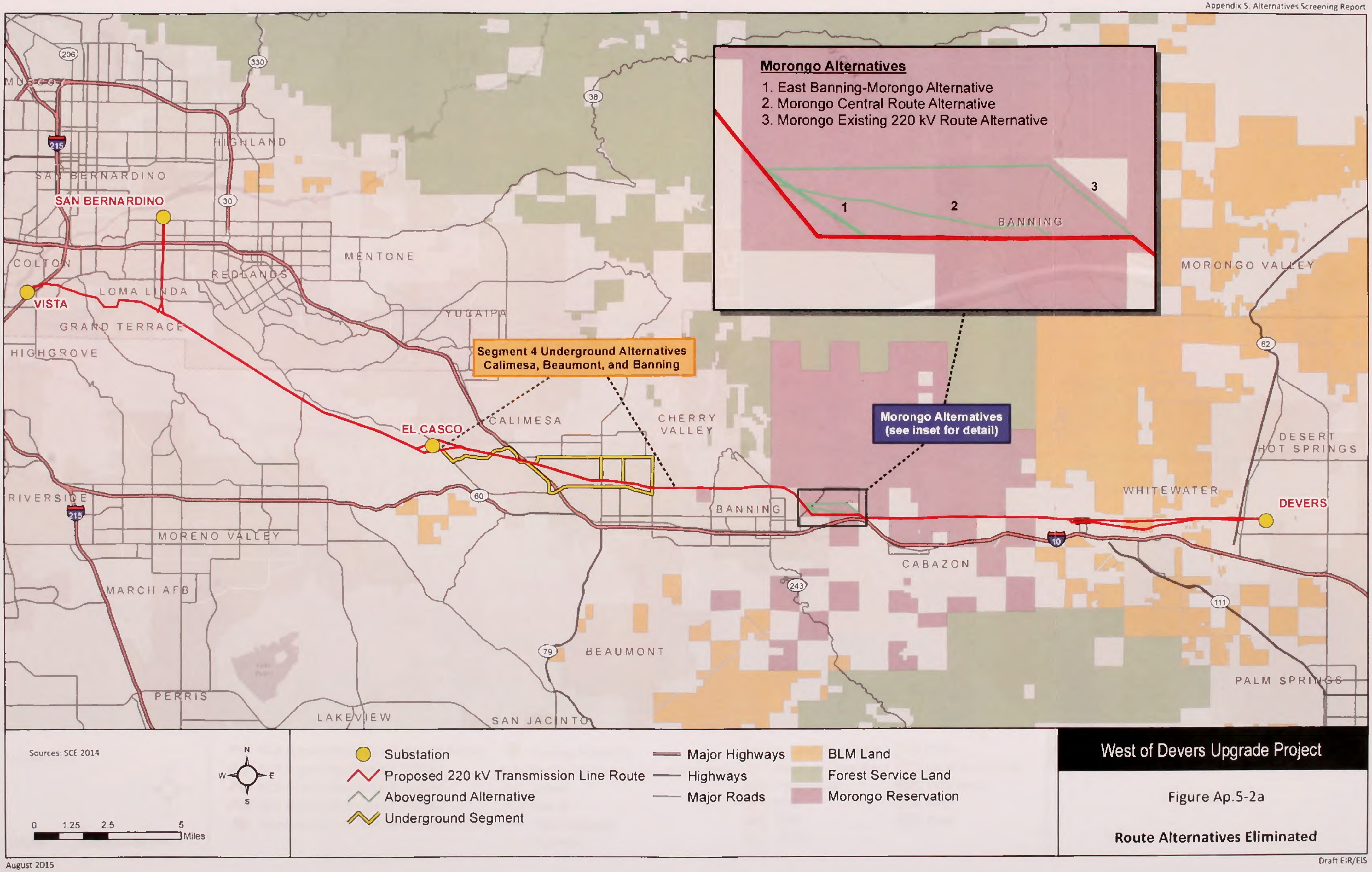
Phased Build Alternative
In Segment 6: Retain existing double-circuit towers; remove single-circuit towers and replace with new double-circuit towers. Install 795 Drake ACCR on all structures (4 circuits).

● Substation	Proposed 220 kV Transmission Line Route	BLM Land
■ Tower Relocation Alternative	Proposed 66 kV Subtransmission Line Route	Forest Service Land
Phased Build Alternative (Described in text boxes)	Iowa Street 66kV Underground Alternative	Morongo Reservation

West of Devers Upgrade Project

Figure Ap.5-1

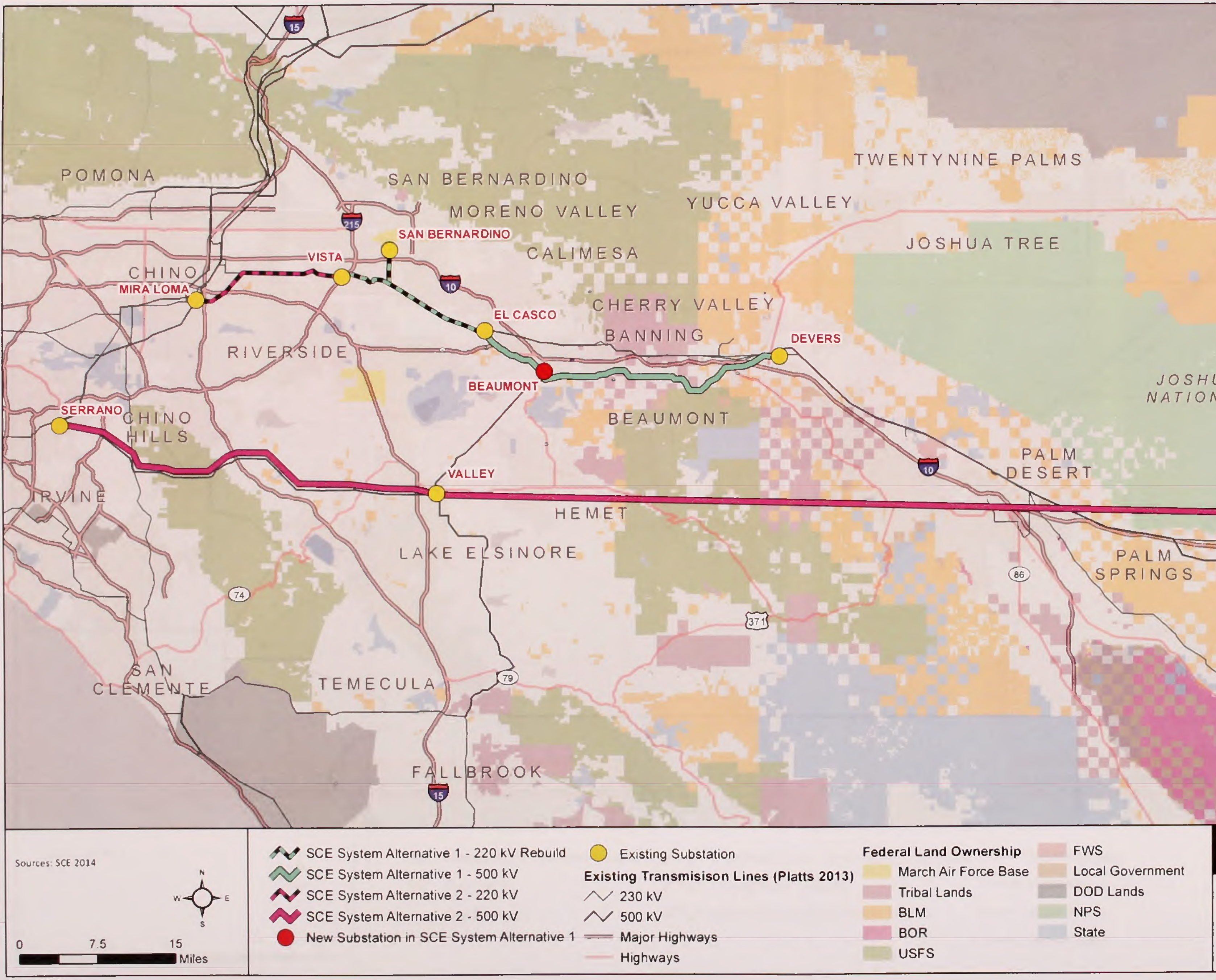
Alternatives Retained



West of Devers Upgrade Project

Figure Ap.5-2a

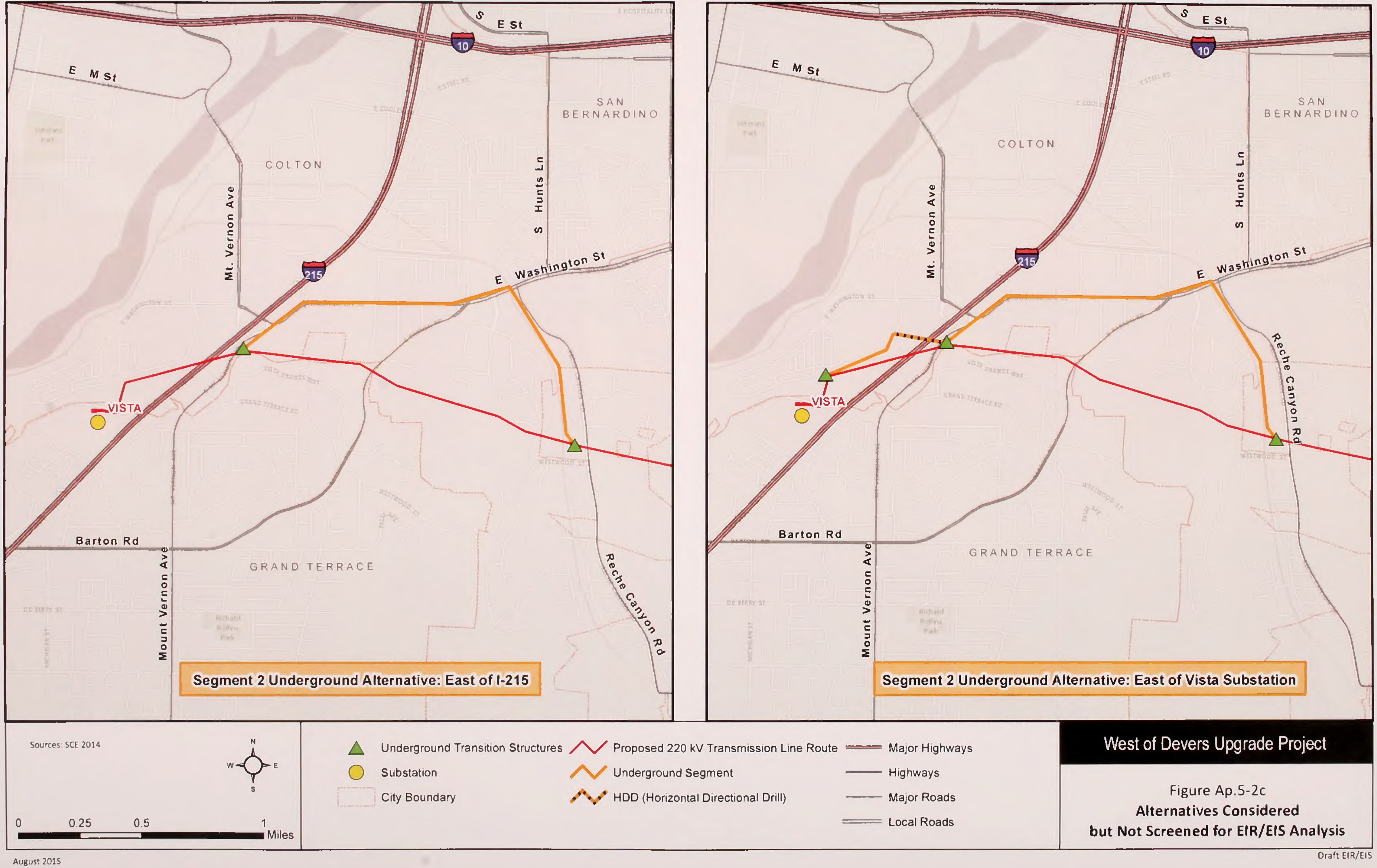
Route Alternatives Eliminated



West of Devers Upgrade Project

Figure Ap.5-2b

System Alternatives Eliminated



West of Devers Upgrade Project

Figure Ap.5-2c
Alternatives Considered but Not Screened for EIR/EIS Analysis

4. Alternatives Retained for Analysis

4.1 Introduction

This section describes the three alternatives evaluated in detail in this EIR/EIS, and explains how they were considered through the alternatives screening process.

4.2 Tower Relocation Alternative

This alternative was developed in response to scoping comments of residents who expressed concerns that some proposed towers would be closer to their homes than the existing structures. Under the Proposed Project, some new tower centerlines in Segment 4 (Beaumont and Banning) and Segment 6 (Whitewater and Devers) would be about 50 feet from the edge of ROW, closer to residences than the existing structures and leaving the rest of the ROW empty. SCE would retain this vacant space in the ROW for future transmission expansion.

Alternative Description

The Tower Relocation Alternative would use about 50 feet of this vacant ROW width identified for future transmission lines to place towers farther away from adjacent residences. This alternative would change structure placement only in portions of Segment 4 and Segment 6 where the EIR/EIS team has identified potentially significant visual impacts.

Table Ap.5-1 identifies all of the locations along the Proposed Project where proposed towers would be closer to residences than the existing structures. Based on the data in Table Ap.5-1, the Tower Relocation Alternative has been developed to move these closer towers to positions that are farther from the nearest residences. In general, the alternative would relocate towers approximately 50 feet to the north of the proposed tower locations. The Tower Relocation Alternative is illustrated in Figures Ap.5-3a through Ap.5-3h.

Table Ap.5-1. Tower Relocations Considered as a Project Alternative

Structure #s	Description/Location	Proximity of Proposed Towers and Details of Tower Relocation Alternative (if applicable)
Segment 1	**Redlands / San Bernardino**	
n/a	Towers follow existing centerline of current structures	Centerline of proposed towers would remain the same as existing structures. Towers move north and south along ROW. While some residences would have a structure closer to them than they do now, those residences would have the conductors at higher elevations (and therefore farther from the residences). – No alternative recommended.
Segment 2	**Grand Terrace / Loma Linda**	
2N04 to 2N06	Towers are upslope from homes in upper (southern) Loma Linda – homes are on upper ends of Weliber Street and Allen Way	Towers would move 45 feet north (closer to residences), but the new tower would remain about 80 feet south of the property line and about 200 feet south of the houses. – No alternative recommended.
2N20	New tower (in area previously spanned) behind homes at west end of Prado Lane	Tower is 250 feet from back of home on Prado Lane and 60-70 feet from property line. Overall the conductors would move about 25-40 feet closer to the residences, but the lots are very deep and homes are more than 200 feet away from the ROW. There are lots in this area that are newly within the ROW; the project would need new easements of 25-80 feet across the southern portion of these lots. – No alternative recommended.

Table Ap.5-1. Tower Relocations Considered as a Project Alternative

Structure #s	Description/Location	Proximity of Proposed Towers and Details of Tower Relocation Alternative (if applicable)
2N20 to 2N21	New span behind first house on Prado Lane (south side, east of Reche Canyon Road)	Conductors would move about 25 feet closer to a residence, which is located at the very back of the lot, adjacent to the ROW. Centerline of tower alignment would remain about 75 feet from this residence. – No alternative recommended.
Segment 3	**San Timoteo Canyon**	
3S25/3N25 to 3S26/3N26	San Timoteo Canyon just east of Viper Road	Northernmost tower moves 40 feet closer to residential area. However, residences are more than 100 feet from the ROW and proposed towers would remain 60 feet from the edge of ROW. – No alternative recommended
Segment 4	**Beaumont – El Casco to I-10**	
	West of Tower 4S52 / 4N52, the new towers are farther from the residences until San Timoteo Canyon Road.	North of Palmer Trail, Demaret Ave, Amour and Ventura Drives, the new structures would be farther from residences than the existing structures. – No alternative recommended.
4S50/4N50 to 4S52/4N52	East of San Timoteo Canyon Road and West of Cherry Valley Blvd	**Calimesa West Relocation Segment.** Proposed southern structures would move about 10 feet south, closer to residences. – The alternative would move towers to the north (Figure Ap.5-3a).
4S46/4N46	Just west of the I-10 crossing, residences north of Cherry Tree Lane and Vineyard Avenue back up to ROW	**Calimesa East Relocation Segment.** Proposed pair of structures on the south side of the ROW would move 20 feet closer to homes. – The alternative would move towers to the north (Figure Ap.5-3b).
Segment 4	**Beaumont – Solara**	
4S40/4N40 to 4S43/4N43	From I-10 crossing through east end of Solara development; From Deodar Drive to Oak View Drive, through and west of Solara development	**Brookside Relocation West Segment.** Proposed pair of structures on the south side of the ROW would move 20 feet closer to homes. – The alternative would move towers to the north (Figure Ap.5-3c).
Segment 4	**Beaumont – East of Solara**	
4S36/4N36 to 4S39/4N39	East of Oak View Drive (and through and within park)	**Brookside Relocation East Segment.** One set of proposed structures on the south side of the ROW would move 20 feet closer to homes. – The alternative would move towers to the north (Figure Ap.5-3d)
4N28/4S28 to 4N31/4S31	West of Cherry Avenue to Palm Avenue	**Beaumont-Cherry Relocation Segment.** Two pairs of proposed structures on the south side of ROW would move 30 to 40 feet closer to homes. – The alternative would move towers to the north (Figure Ap.5-3e).
4N25/4S25 to 4N27/4S27	East of Cherry Avenue and west of Star Light Avenue	**Beaumont-Cherry Relocation Segment.** Houses are under construction in this area just south of the ROW. Near Cherry Avenue, there are 14 houses existing (2014). Proposed structures would move about 50 feet closer to the southern edge of the ROW. – The alternative would move towers to the north (Figure Ap.5-3e).
4N23/4S23 to 4N26/4S26	Just west of Highland Springs Avenue and continuing west to Star Light Avenue	**Cherry–Highland Springs Relocation Segment.** The closer of the pair of proposed towers would be about 50 feet closer to the edge of ROW than the existing structures are. – The alternative would move towers to the north (Figure Ap.5-3f).
Segment 4	**Banning**	
4N14/4S14 to 4N16/4S16	At north end of Mountain Avenue and north of Mockingbird Lane	**Mockingbird Lane Relocation Segment.** The proposed closest structures north of Mockingbird Lane would not be closer to residences than the existing ones; their locations are very similar with respect to distance from edge of ROW. However, the alternative is presented because a pair of proposed towers (Structures 14 and 15) will be much more visible from residences because they will be larger and closer together than the existing structures. – The alternative would move towers to the north (Figure Ap.5-3g).

Table Ap.5-1. Tower Relocations Considered as a Project Alternative

Structure #s	Description/Location	Proximity of Proposed Towers and Details of Tower Relocation Alternative (if applicable)
Segment 6	**Whitewater**	
6N38 to 6N41	Whitewater area, north of Amethyst Drive. About 10 existing homes on north side of street have ROW in/behind their backyards	**Whitewater–Amethyst Drive Relocation Segment.** Proposed new tower in separated northern ROW would move south of existing structures and closer to homes by about 55 feet [measured at Structure 6N38]. – The alternative would move towers to the north (Figure Ap.5-3h).
6S39 to 6S40	Whitewater area, behind (north of) houses on Calico Avenue. About 5 existing homes on north side of street have ROW behind their backyards	Two proposed towers in the separated southern ROW move south of existing structures and closer to homes by about 30 to 50 feet, but the new towers would remain more than 130 feet from the fence lines. – No alternative recommended.
Segment 6	**N. Palm Springs**	
6N16 to 6N17	Just west of Highway 62 – Existing home is between the two proposed towers	New northern conductors would move approximately 60 feet closer to one isolated residence, but the towers supporting the conductors would move about 200 feet farther away. – No alternative recommended.

The Tower Relocation Alternative would require the relocation of 6 areas of specific Proposed Project tower pairs. Five of these areas are in Segment 4 and one area is in Segment 6, as explained in the following descriptions. As shown in Table Ap.5-2, there are a few situations where new towers would be located closer to residences, but no alternative to move them is recommended. In these situations, either the new towers would remain more than 100 feet from the nearest residence, or the topography would result in the tower being more visible if it were moved farther away.

Tower Relocation Alternative: Segment 4

Calimesa West and Calimesa East Relocation Segments. In the City of Calimesa and the City of Beaumont, two relocation segments address the area west of I-10. On the east and west sides of the Palmer Avenue crossing, the Calimesa West portion of the Tower Relocation Alternative would shift 3 pairs of towers 50 to 55 feet to the north, as shown on Figure Ap.5-3a. The towers moved would be Structures 4S50 through 4S52 and Structures 4N50 through 4N52. This relocation would leave about 200 feet of vacant ROW to the north of the new towers, compared with the Proposed Project, which would retain about 255 feet to the north (at Structure 4N51).

Approximately 1,000 feet west of the I-10 crossing in Calimesa, the Calimesa East Relocation Segment of the Tower Relocation Alternative would shift one pair of towers (Structures 4S46 and 4N46) 50 feet to the north, as shown in Figure Ap.5-3b. This would reduce the retained space for future transmission expansion to about 210 feet compared with about 270 feet under the Proposed Project.

Brookside, Beaumont-Cherry, and Cherry–Highland Springs Relocation Segments. The portion of the corridor east of Deodar Drive and west of Highland Springs Drive in the City of Beaumont would have the longest stretch of towers that would be located closer to residences under the Proposed Project as compared to current structure locations. The Tower Relocation Alternative would shift 19 pairs of towers 50 feet to the north (from Structures 4S23 through 4S43 and Structures 4N23 through 4N43), as shown in Figures Ap.5-3c through Ap.5-3f. This alternative would leave about 210 feet of ROW vacant as compared to the Proposed Project, which would retain about 270 feet of vacant space on the north side of the ROW.

Mockingbird Lane Relocation Segment. As shown in Figure Ap.5-3g, this segment would shift 3 pairs of towers 50 feet to the north (Structures 4S14 through 4S16 and 4N14 through 4N16). The alternative would reduce the retained space for future transmission expansion to approximately 240 feet, compared with approximately 290 feet under the Proposed Project.

Tower Relocation Alternative: Segment 6

Whitewater–Amethyst Drive Relocation Segment. As shown in Figure Ap.5-3h, the Tower Relocation Alternative would shift 4 individual structures (Structures 6N38 to 6N41) approximately 65 feet to the north within the northern portion of the split ROW occurring in this segment. The transmission line ROW through the area by Haugen–Lehmann Way would remain separated into two ROW corridors (as it is currently). The shift would reduce the retained vacant space to about 175 feet, compared to the Proposed Project, which would retain about 240 feet to the north (at Structure 6N38).

Consideration of CEQA/NEPA Criteria

Project Objectives, Purpose and Need

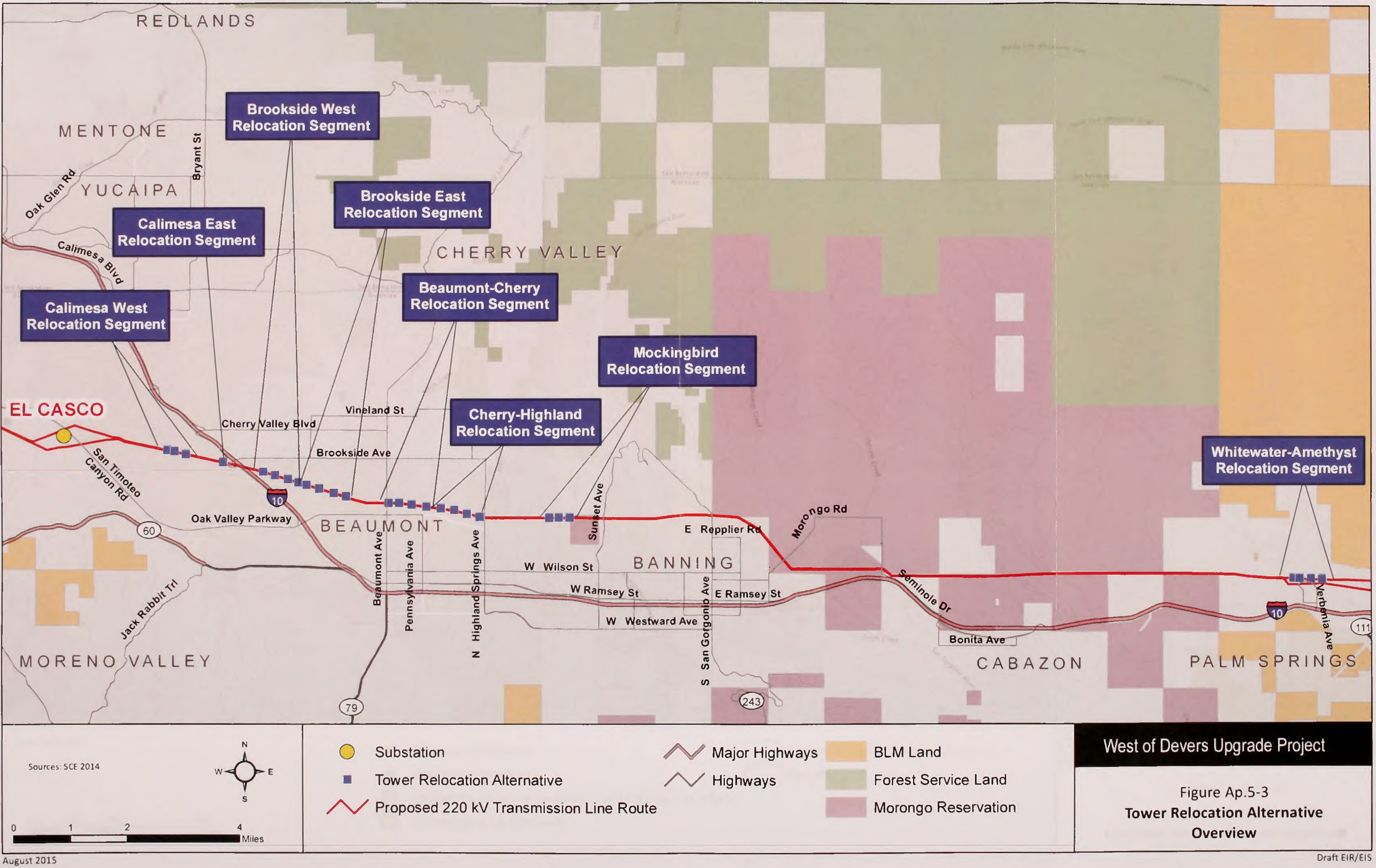
Basic Project Objective 1, Increase system deliverability: The Tower Relocation Alternative would meet this objective by providing the same transfer capability and deliverability as the Proposed Project. The resulting capacity of 4,800 MW would exceed the 2,200 MW of increased deliverability defined in this objective.

Basic Project Objective 2, Support renewable energy goals: Because the Tower Relocation Alternative would have the same transfer capacity as the Proposed Project, it would support renewable energy goals in the same manner. As discussed under "Feasibility" below, construction of the Tower Relocation Alternative would entail a similar construction approach as would occur under the Proposed Project. However, the overall construction schedule for the Tower Relocation Alternative could require a few additional months for additional outages and use of shoo-flies. In any event, this additional time would not affect California's meeting of the currently defined 33 percent RPS or the effective use of federal lands for renewable energy development.

Basic Project Objective 3, Maximize remaining space in the corridor: The Tower Relocation Alternative would be located within SCE's existing ROW. Even when shifting the structures 50 feet farther from residences in Segments 4 and 6, there would remain adequate space within the ROW (up to 175 feet) for transmission expansion, if needed by SCE in the future. Table Ap.5-2 shows the vacant space that would remain for future transmission expansion on either side of the corridor after implementing this alternative. Note that there is essentially no vacant space in the ROW in Segment 1, and in Segment 2 the potentially vacant space is not within the Proposed Project ROW, but in a nearby parallel SCE transmission ROW.

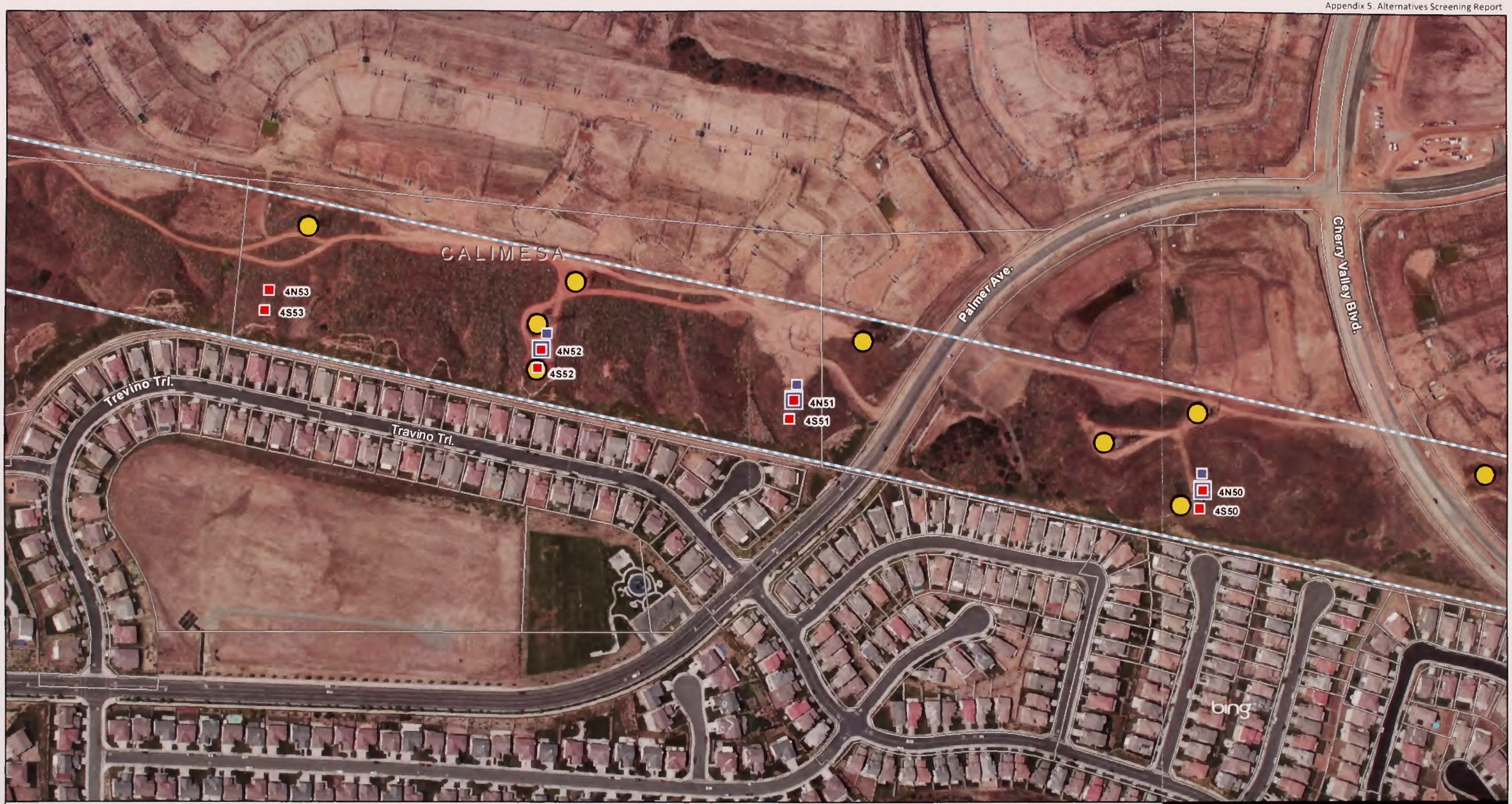
Table Ap.5-2. Vacant Space within ROW in the Tower Relocation Alternative

	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6
Vacant space north side (feet)	n/a	n/a	At least 50	210	n/a	175
Vacant space south side (feet)	n/a	n/a	220	50	n/a	0
Room for Future 500 kV?	n/a	Unknown	Yes	Yes	Unknown	Yes



West of Devers Upgrade Project

Figure Ap.5-3
Tower Relocation Alternative Overview

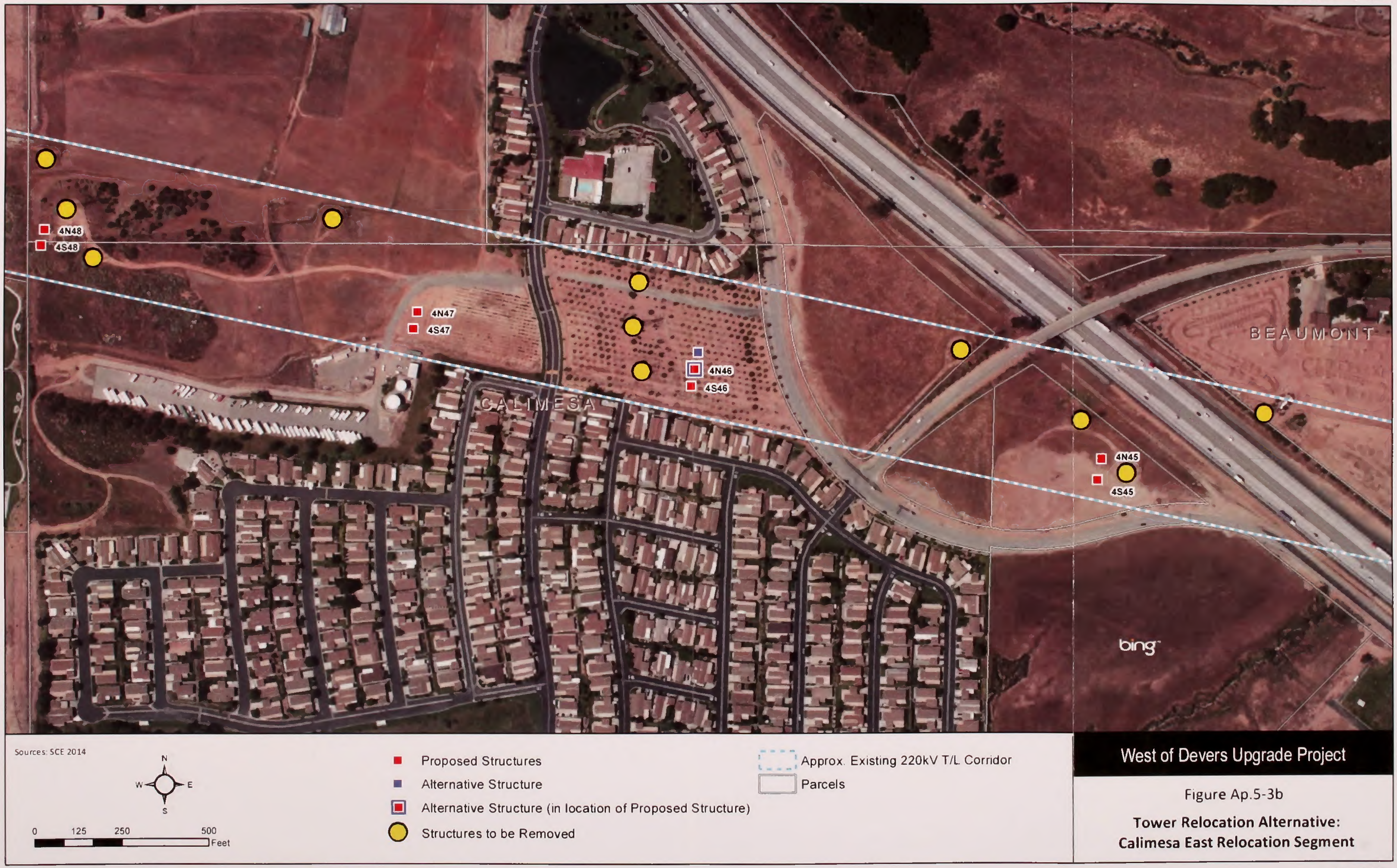


Sources: SCE 2014

West of Devers Upgrade Project

Figure Ap.5-3a

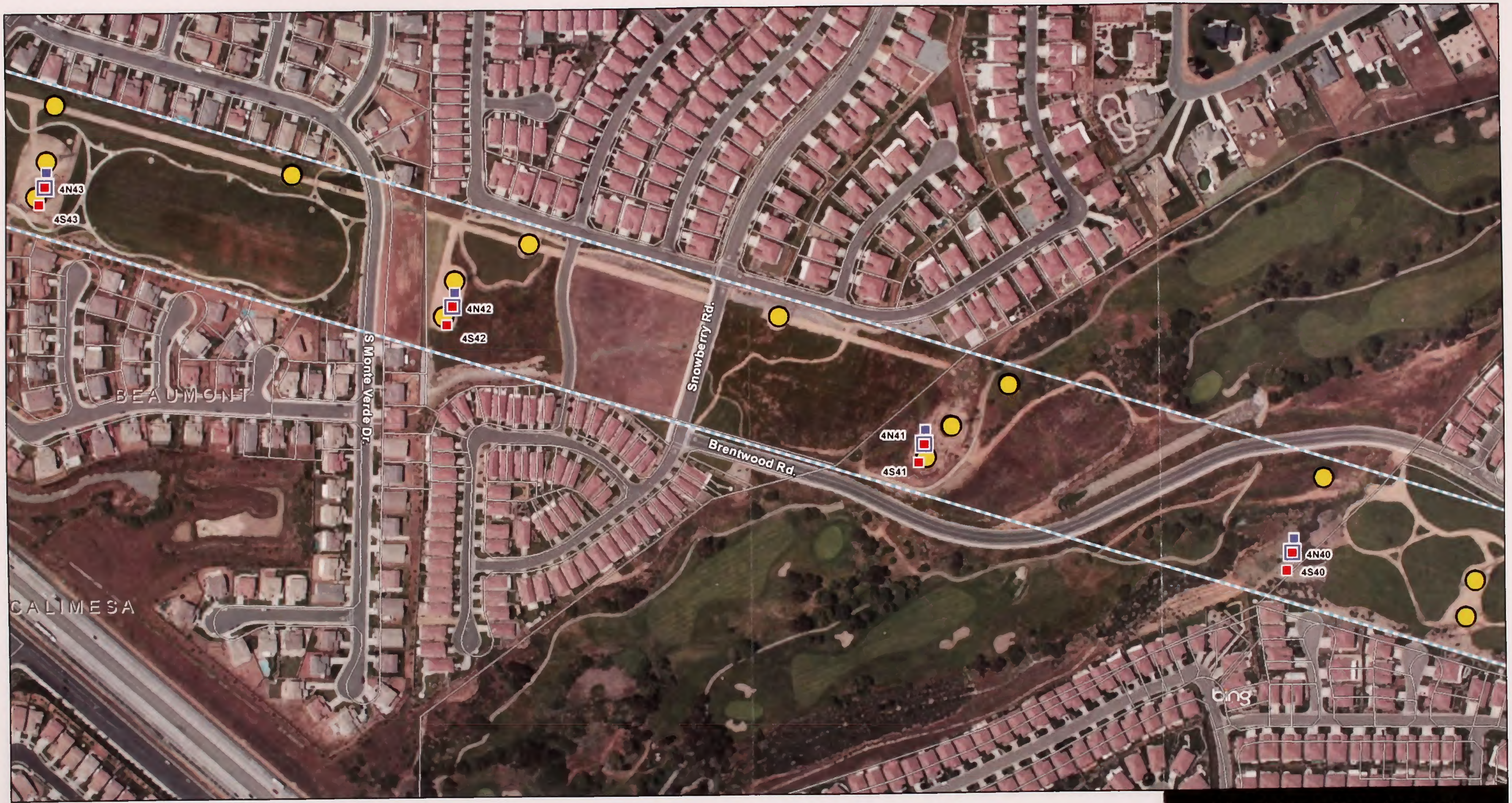
Tower Relocation Alternative: Calimesa West Relocation Segment



West of Devers Upgrade Project

Figure Ap.5-3b

Tower Relocation Alternative: Calimesa East Relocation Segment



Sources: SCE 2014

N
W E
S

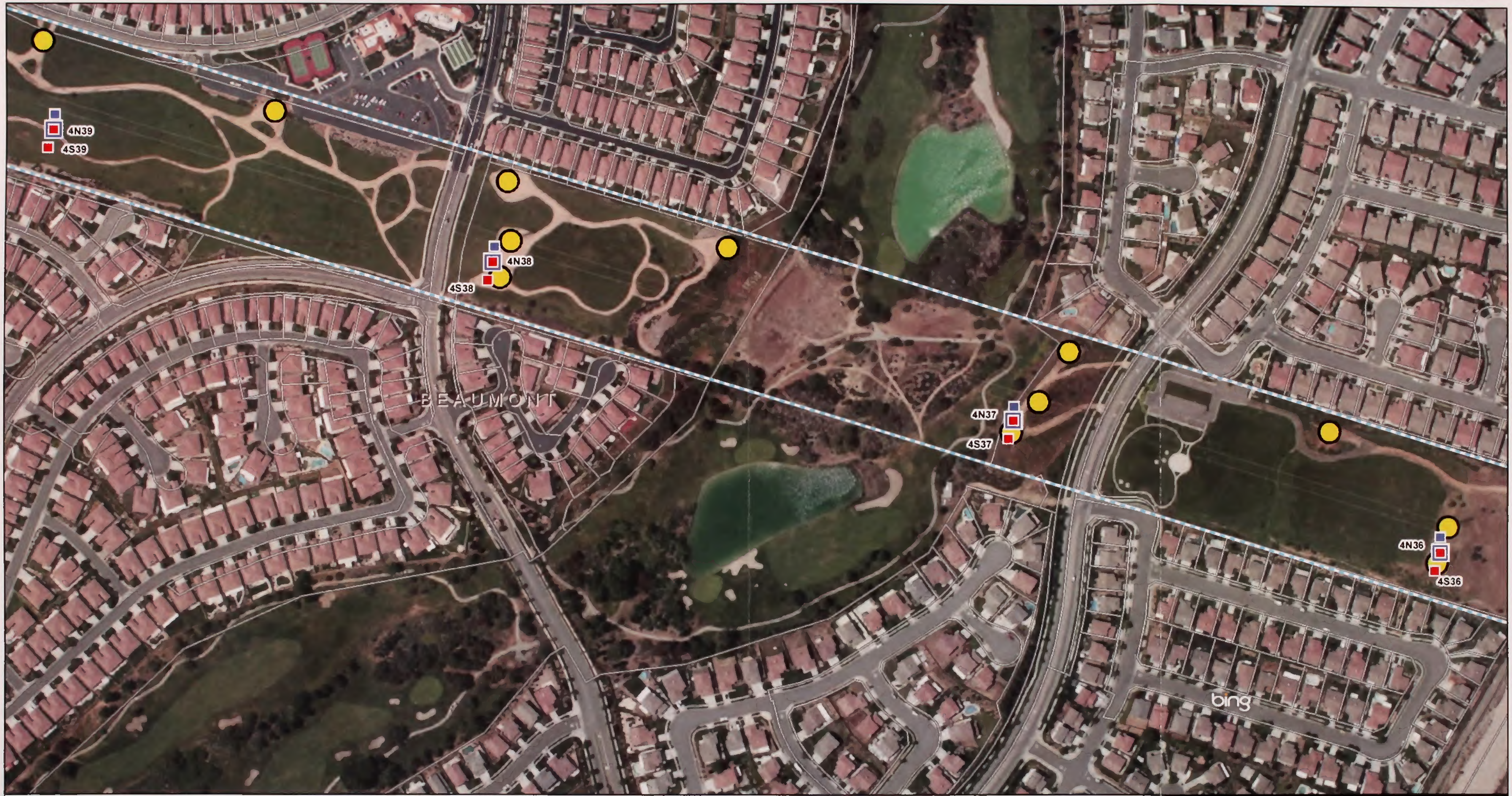
0 125 250 500 Feet

- 🟥 Proposed Structures
- 🟦 Alternative Structure
- ▣ Alternative Structure (in location of Proposed Structure)
- ● Structures to be Removed
- ⬚ Approx. Existing 220kV T/L Corridor
- ▭ Parcels

West of Devers Upgrade Project

Figure Ap.5-3c

**Tower Relocation Alternative:
Brookside Relocation West**



Sources: SCE 2014

🟥 Proposed Structures

🟦 Alternative Structure

▣ Alternative Structure (in location of Proposed Structure)

● Structures to be Removed

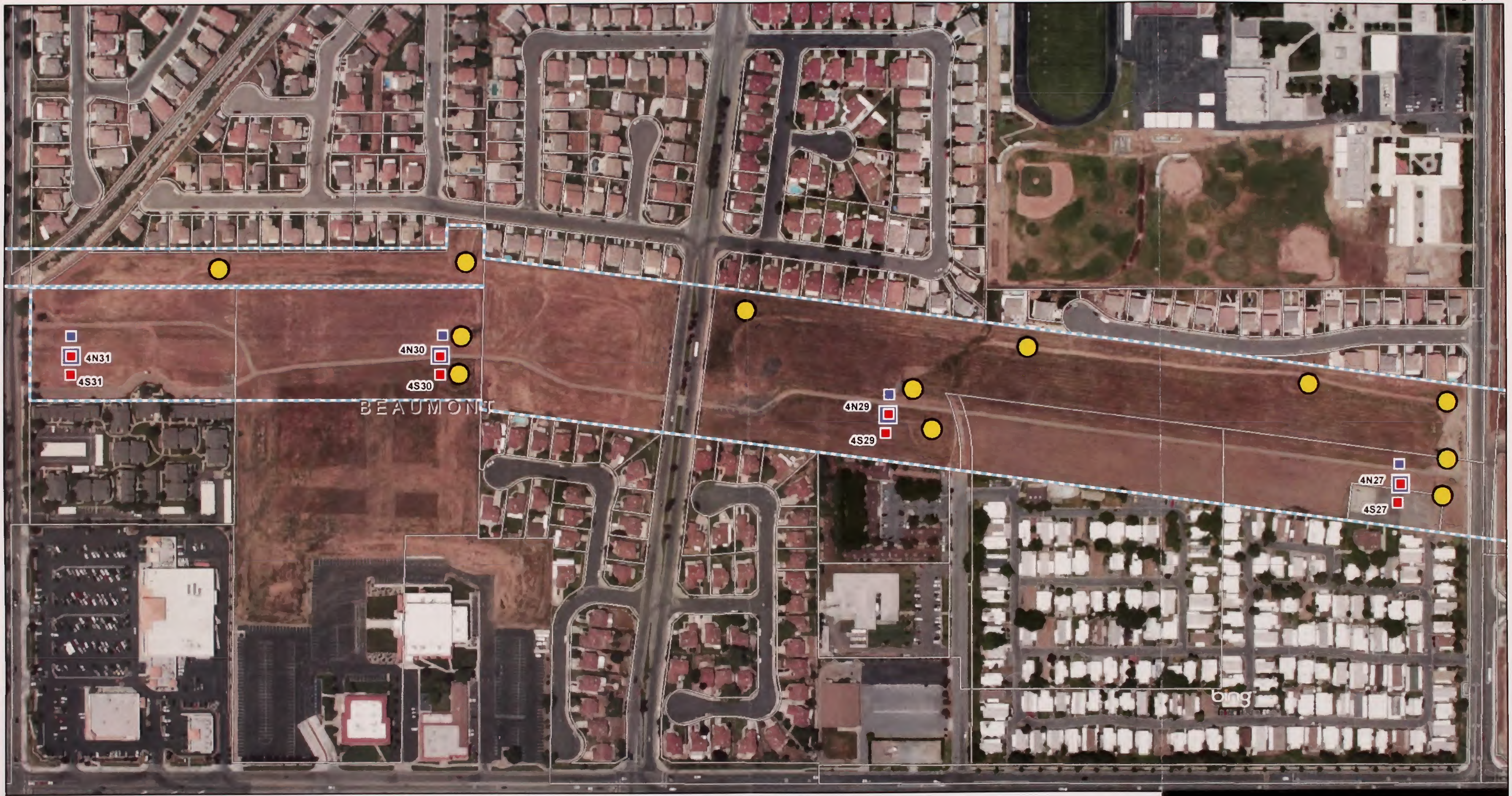
▭ Approx. Existing 220kV T/L Corridor

▭ Parcels

West of Devers Upgrade Project

Figure Ap.5-3d

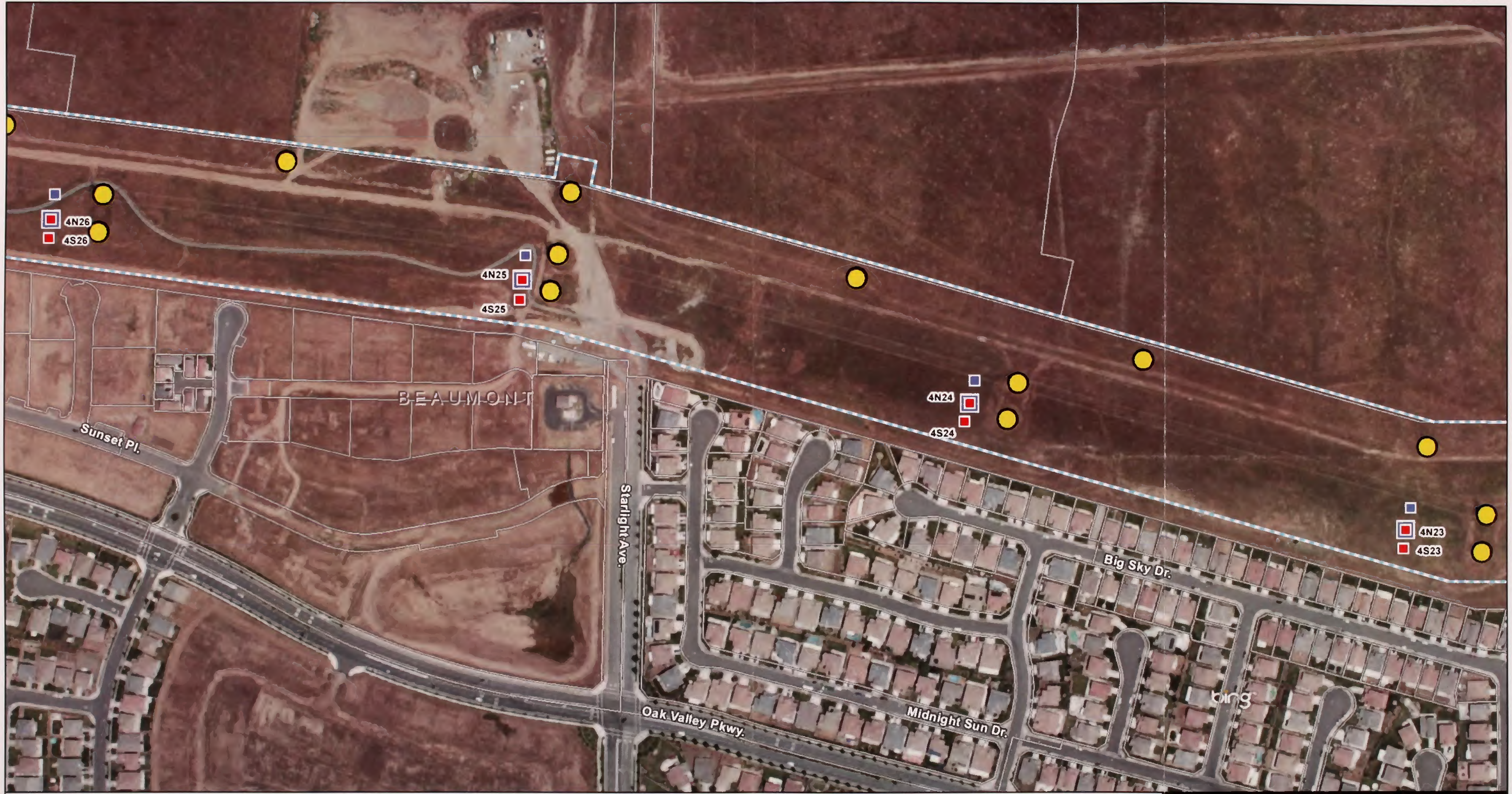
Tower Relocation Alternative: Brookside Relocation East



West of Devers Upgrade Project

Figure Ap.5-3e

Tower Relocation Alternative: Beaumont-Cherry Relocation Segment



🟥 Proposed Structures

🟦 Alternative Structure

▣ Alternative Structure (in location of Proposed Structure)

🟡 Structures to be Removed

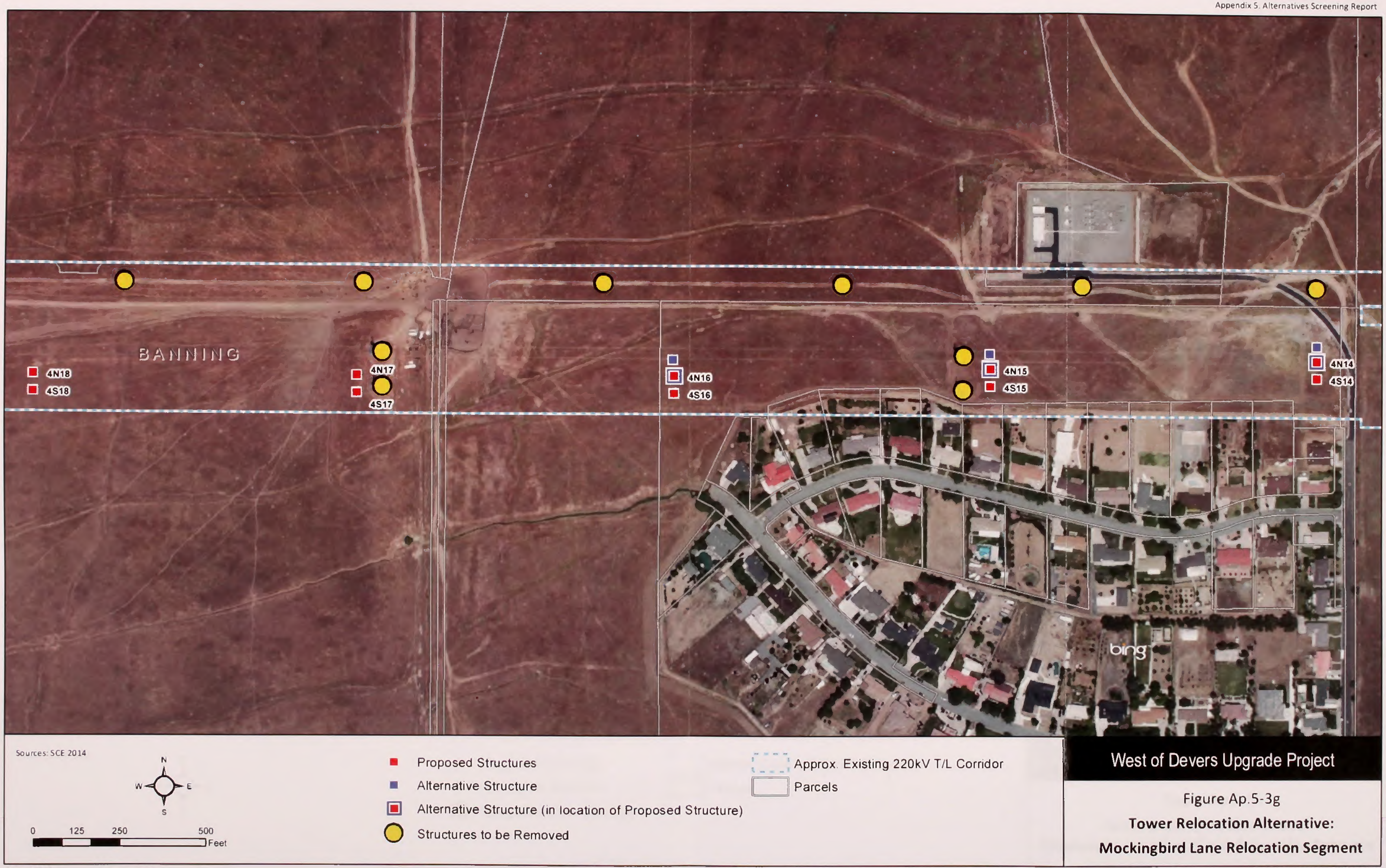
☐ Approx. Existing 220kV T/L Corridor

☐ Parcels

West of Devers Upgrade Project

Figure Ap.5-3f

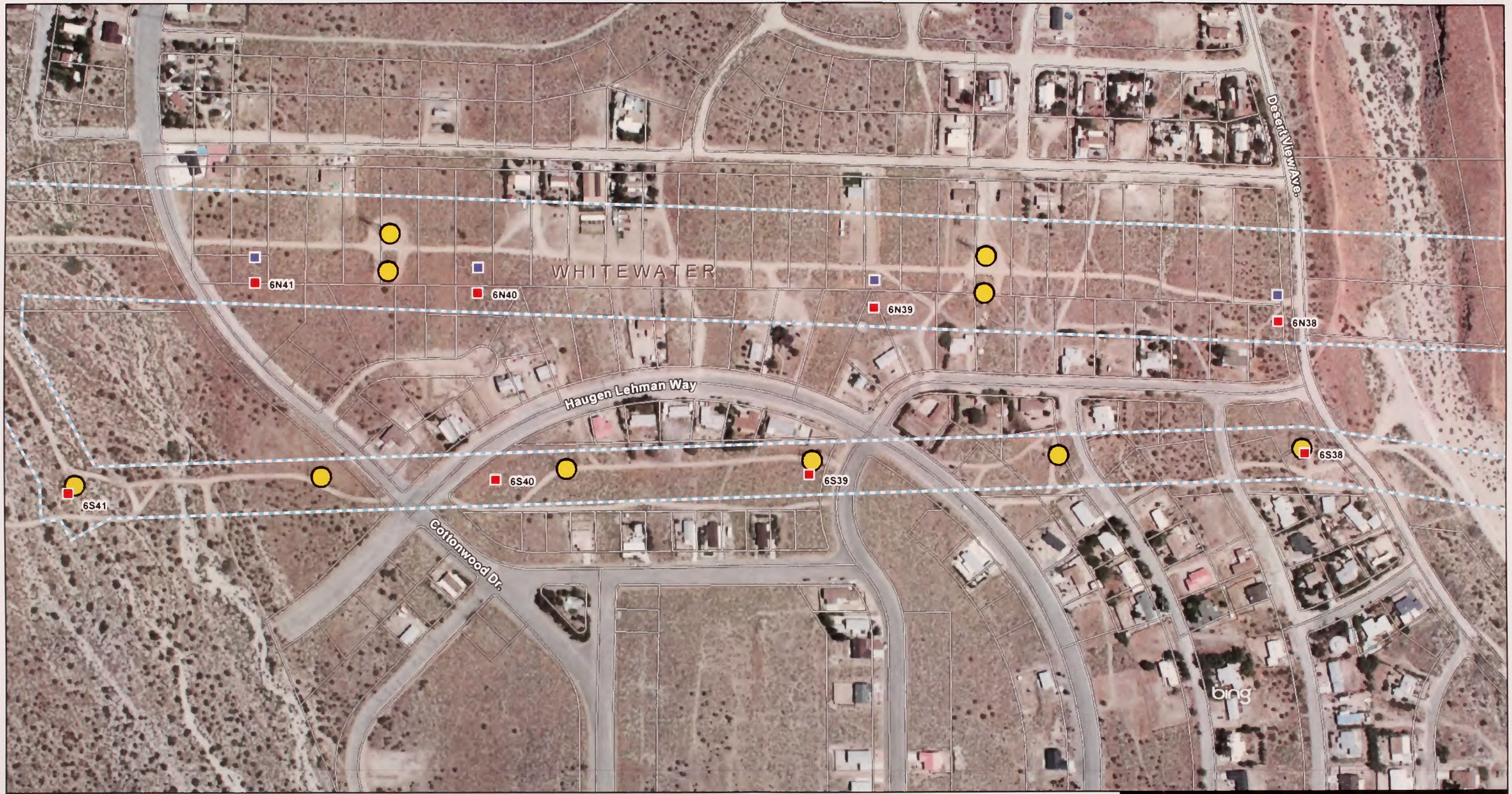
**Tower Relocation Alternative:
Cherry-Highland Springs Relocation Segment**



West of Devers Upgrade Project

Figure Ap.5-3g

Tower Relocation Alternative: Mockingbird Lane Relocation Segment



Sources: SCE 2014

- 🟥 Proposed Structures
- 🟦 Alternative Structure
- ● Structures to be Removed
- ▭ Approx. Existing 220kV T/L Corridor
- ▭ Parcels

West of Devers Upgrade Project

Figure Ap.5-3h

Tower Relocation Alternative: Whitewater-Amethyst Drive Relocation Segment

Feasibility

Legal and Regulatory Feasibility. This alternative is essentially the same as the Proposed Project, and would be equally feasible considering legal and regulatory factors.

Technical Feasibility. Construction of the 220 kV double-circuit towers is technical feasible, because they are the same structure types included in SCE's Proposed Project. This technical feasibility discussion therefore focuses on the availability of space in the ROW. The alternative has been evaluated for technical feasibility based on SCE's responses to CPUC data requests. Based on these responses, adequate space in the ROW for the upgraded towers and for future corridor expansion is considered to be available for tower relocations as follows:

- In Segments 4 and 6, the Proposed Project would leave a minimum of 175 feet and as much as 300 feet north of the proposed pairs of towers. In Segment 3, the Proposed Project would leave about 270 feet south of the proposed pairs of towers.
- SCE indicates that the minimum spacing required between a 220 kV double-circuit structure and a 500 kV double-circuit structure is 100 feet from center-to-center, with an additional 75 feet typically required from the center of the 500 kV tower to an edge of the ROW. This results in a total distance requirement of 175 feet from the center of the 220 kV structure to the edge of the ROW, sufficient to allow construction of a 500 kV line (SCE Response to CPUC Data Request ALT-15.A; SCE, 2014).
- Based on this information, this screening analysis assumes that the centers of the newly constructed 220 kV double-circuit structures must remain at least 175 feet from one edge of the ROW to allow possible future installation of double-circuit 500 kV tubular steel poles.

Construction Timeframe. Similar to the Proposed Project, this alternative would require construction activities near existing and operating circuits. As with the Proposed Project, this would require planned outages and use of shoo-flies due to the physical overlap between the new and existing towers. In the areas where this alternative would relocate structures toward the center of the ROW, SCE would need to use shoo-flies to provide adequate clearance for construction of the new double-circuit towers while keeping the neighboring existing circuits operational. In Segment 4, some locations would require a shoo-fly for two circuits over a short distance when installing the new tower near existing double-circuit structures. The additional outages and use of shoo-flies in these locations would add a few months to the construction duration. However, the alternative would achieve SCE's project objectives, which do not include specific in-service dates for the individual circuits (SCE Response to CPUC Data Request ALT-22; SCE, 2014). Therefore, this alternative would be feasible with regard to construction timeframes.

Reliability. Like the Proposed Project, the Tower Relocation Alternative would comply with all reliability requirements of NERC, FERC, and the CPUC.

Environmental Advantages

Visual Resources. Shifting structures away from residences would reduce potentially significant visual impacts. Because the views of existing structures vary from house to house, and the view of the proposed towers also would vary depending on the specific viewpoint, the visual resources analysis concludes that the Proposed Project would result in significant adverse visual impacts at about 30 percent of the residences along the ROW in Segments 4 and 6. This alternative would eliminate significant long-term visual impacts of the Proposed Project in the areas where relocation would occur. It would also reduce temporary visual impacts associated with construction by siting the towers farther from residences.

Land Use and Construction-Related Disturbance. Siting towers farther from residences would reduce construction-related impacts associated with noise and dust effects on sensitive receptors.

Environmental Disadvantages

Construction-Related Disturbance. The potential additional construction time required to build this alternative could extend the length of construction disturbances near residences and other sensitive receptors.

Alternative Conclusion

Retained for Analysis. The Tower Relocation Alternative would meet all three basic project objectives and it would be feasible with respect to its constructability, reliability, and legal and regulatory factors. In addition, this alternative would reduce significant visual impacts of the Proposed Project and would reduce construction-related disturbance associated with the upgraded 220 kV lines by ensuring that relocated towers would be no closer to residences than the existing structures. Because this alternative would reduce potentially significant impacts of the Proposed Project, it has been retained for full evaluation in this EIR/EIS.

4.3 Iowa Street 66 kV Underground Alternative

This 1,600-foot underground alternative was developed by the EIR/EIS team to eliminate significant visual impacts of the proposed new 66 kV San Bernardino–Redlands-Tennessee subtransmission line to residences along Iowa Street in the City of Redlands.

Alternative Description

As illustrated in Figure Ap.5-4, under the Iowa Street 66 kV Underground Alternative, the 66 kV subtransmission line would transition from overhead to underground in Iowa Street just south of the single-lane bridge, approximately 275 feet north of Iowa Street's intersection with Orange Avenue. The subtransmission line would travel underground in new conduit in Iowa Street for approximately 1,600 feet before transitioning from underground to overhead on the south side of Barton Road in line with the existing overhead San Bernardino–Redlands-Tennessee 66 kV subtransmission line running east-west along Barton Road. This underground alternative would replace a similar length of proposed new overhead subtransmission line that is part of the Proposed Project.

Consideration of CEQA/NEPA Criteria

Project Objectives, Purpose and Need

Basic Project Objective 1, Increase system deliverability: The Iowa Street 66 kV Underground Alternative would meet this objective by providing the same transfer capability and deliverability as the Proposed Project. The resulting capacity of 4,800 MW would exceed the 2,200 MW of increased deliverability defined in this objective.

Basic Project Objective 2, Support renewable energy goals: This alternative would facilitate progress toward achieving California's RPS goals in the same manner as the Proposed Project.

Basic Project Objective 3, Maximize remaining space in the corridor: This objective does not apply to the 66 kV subtransmission system.

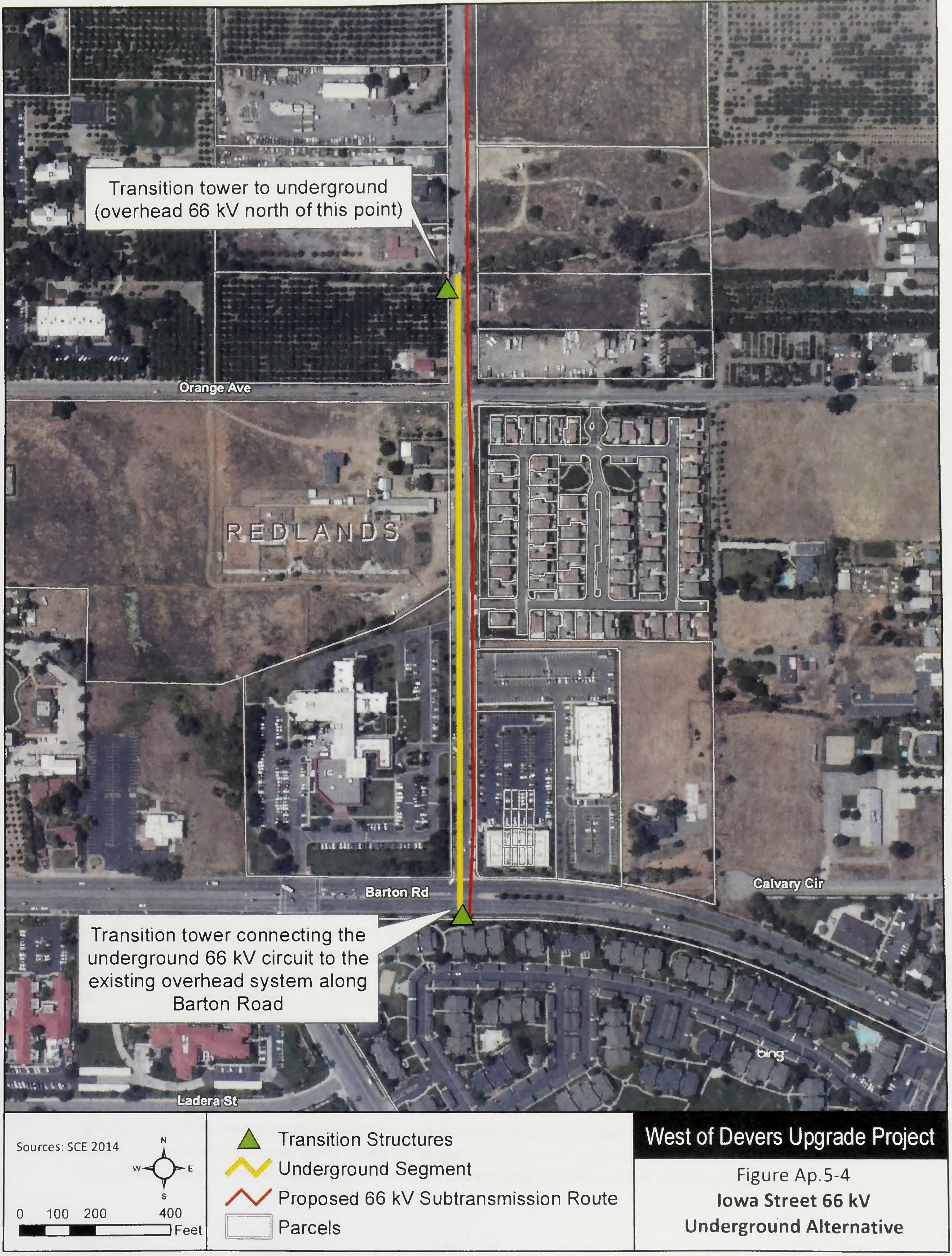

Transition tower to underground (overhead 66 kV north of this point)
Orange Ave
REDLANDS
Barton Rd
Calvary Cir
Transition tower connecting the underground 66 kV circuit to the existing overhead system along Barton Road
Ladera St
bing
Sources: SCE 2014
N
W
E
S
0
100
200
400
Feet
▲ Transition Structures
Underground Segment
Proposed 66 kV Subtransmission Route
Parcels
West of Devers Upgrade Project

Figure Ap.5-4
Iowa Street 66 kV Underground Alternative

Feasibility

Legal and Regulatory Feasibility. This alternative appears to be feasible, considering legal and regulatory factors.

Technical Feasibility. Installation of 66 kV subtransmission lines underground is technically feasible, and is proposed by SCE in other segments of its WOD Upgrade Project. SCE has stated that, while it has not thoroughly investigated the existing underground utilities in Iowa Street, it does not have any reason to conclude that there would be insufficient space somewhere within the current roadway width to place a new subtransmission conduit system (SCE, 2014; SCE Response to CPUC Data Request ALT-28).

Construction Timeframe. Installation of 1,600 feet of the 66 kV subtransmission line underground, rather than overhead as proposed, would require more time to construct. However, this time would be substantially less than the time required to construct the 220 kV portions of the project, so it would not affect the overall timeframe for construction of the project as a whole.

Reliability. Underground subtransmission lines are more difficult to repair due to the required access to underground cables and splice vaults, so more time would be required for repair of outages. However, subtransmission lines are regularly installed underground by utilities in California, and they are considered to be reliable.

Environmental Advantages

Visual Resources. This underground alternative would eliminate potentially significant visual impacts associated with the new overhead 66 kV subtransmission route along Iowa Street, adjacent to the Cottage Lane residential subdivision in Redlands. Approximately 7 poles would be eliminated and 2 additional poles would be replaced with transition structures.

Biological Resources. An underground subtransmission line would eliminate the permanent loss of habitat at each pole footings that would result from the construction of the overhead line. In addition, underground transmission lines would reduce the potential for bird collision or electrocution.

Environmental Disadvantages

Traffic and Transportation. The underground route would be located for 1,600 feet within Iowa Street. Construction would require temporary lane closures on Iowa Street, Orange Avenue, and Barton Road, increasing the need for traffic control and resulting in possible delays.

Ground Disturbance. The underground alternative would require substantially more construction activity and ground disturbance due to the trenching required under the alternative. While construction of the overhead 66 kV subtransmission line as part of the Proposed Project would result in construction disturbance primarily at 7 individual structure sites along the alignment, the underground construction and trenching would involve much more extensive ground disturbance and more construction-related impacts (e.g., additional traffic, air quality and dust, and noise). There also is a greater potential to encounter contaminated soils and cultural resources due to the amount of ground disturbance required as compared to having the line overhead.

Construction and Repair Time. Construction of an underground subtransmission line would require more time than an equivalent length of overhead line because of the time required for excavating, cable splicing, backfilling, and paving. In addition, maintenance and restoration time in the event of an outage would be more difficult and could result in longer outages and repair times. Accessing manholes and performing required repairs would require traffic control and possible lane or roadway closure.

Alternative Conclusion

Retained for Analysis. This alternative would be meet the two project objectives applicable to the 66 kV subtransmission line component of the Proposed Project (Basic Project Objectives 1 and 2), and would be feasible. In addition, the Iowa Street 66 kV Alternative would eliminate significant visual impacts associated with the new overhead 66 kV subtransmission line. Therefore, this alternative has been retained for full evaluation in this EIR/EIS.

4.4 Phased Build Alternative

This alternative has been retained for analysis because it would avoid most of the environmental impacts associated with removal of the existing double-circuit towers and construction of new double-circuit towers, while still allowing import of generation from all the reasonably foreseeable generation projects defined by the CAISO.[1] The alternative components are illustrated in Figure Ap.5-5a.

Alternative Description

This alternative is derived from the project proposed by SCE in 2005 as the West of Devers System Upgrades. The purpose of this alternative is to reduce construction by retaining as many existing tower structures as possible and installing lighter-weight but higher-performance conductors on the retained towers. The high-performance conductors would maximize power transfer and avoid structurally overloading the existing towers. The alternative would:

- **Remove and replace existing single-circuit towers.** The two sets of existing single-circuit towers would be removed and one set of new double-circuit towers would be constructed to replace the removed towers. The new set of double-circuit towers would be constructed in the existing ROW, generally north or south of the existing double-circuit towers, as detailed by segment below and in the locations defined in the Tower Relocation Alternative (see Section 4.2).
- **Retain existing double-circuit towers.** The existing double-circuit towers would be retained. Prior to reconductoring some existing structures would be strengthened and their heights increased.
- **Install high-capacity conductors on all four circuits.** Both the new and existing 220 kV double-circuit towers would have the "795 Drake" Aluminum Conductor Composite Reinforced (ACCR) installed.
- **Allow for future capacity expansion of the existing corridor** with several optional future phases. These phases would be implemented as generation projects become certain and capacity is clearly required. Because the Phased Build Alternative would accommodate projects now defined in the CAISO's 2024 Reliability Base Case, it may be 10 years before additional upgrades are needed. The future phases could include:
  - Reconductor the newly constructed 220 kV structures with higher capacity conductors;
  - Replace the retained 220 kV structures with new, stronger 220 kV structures in order to carry heavier, higher capacity conductors;
  - Install a single- or double-circuit 500 kV or 220 kV line in the vacant space remaining in the ROW.

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[1] The Phased Build Alternative would have capacity for all the generation included in the CAISO 2024 Reliability Base Case (see Attachment 2 to this Appendix, pages 5-6 and page 21, Table A4). This scenario includes 3,754 MW of Total Generation On-line and 6,901 MW of Total Generation Capacity), from renewable and conventional resources, as well as the power flow on the system resulting from import of 1,400 MW from the Imperial Irrigation District into the LA Basin.

In Segment 5 on Morongo land, the Phased Build Alternative would look very much like the Proposed Project, as illustrated in Figure Ap.5-5b, and would incorporate the Morongo relocation of a part of the ROW and use of tubular steel poles.

The Phased Build Alternative would use a composite reinforced conductor in an appropriate size to allow import from all generation projects that are reasonably foreseeable (i.e., included in the CASIO's 2024 Reliability Base Case, as well as allowing import of an additional 1,400 MW from the Imperial Valley). A high-performance conductor weighs less and has lower thermal expansion than the SCE-standard ACSR conductor, resulting in less sag for an equivalent strength and durability as the ACSR conductor. Therefore, using an alternative conductor would satisfy the basic project objectives while simultaneously avoiding the need to rebuild towers in the corridor.

Configuration by Project Segment. The Phased Build Alternative would be configured differently in these the following segments:

Segment 1 would be configured to:

- Retain the existing double-circuit 220 kV towers and the San Bernardino–Vista and Etiwanda–San Bernardino circuits without change.
- Re-use the existing double-circuit 220 kV towers, and reconductor to replace the two existing circuits in the 220 kV positions nearest to the edges of the ROW so that Devers–San Bernardino and El Casco–San Bernardino use a new 795 Drake ACCR conductor.
- Retain all existing 66 kV circuits in Segment 1 in place and unmodified. (Note that in this alternative, the Iowa Street 66 kV Underground Alternative would not be required, because that segment of 66 kV line would not be required.)

Segment 2 would be configured to:

- Re-use the existing double-circuit 220 kV towers, and reconductor so that both existing circuits between Devers–Vista use a new 795 Drake ACCR conductor.
- Retain all existing 115 kV circuits in Segment 2 in place and unmodified.

Segment 5 (including Morongo Land) would be configured as follows:

- In the westernmost 3 miles of tribal land, all transmission facilities in the existing ROW would be removed and relocated south to new ROW closer to I-10.
- In this westernmost segment, 19 pairs of new double-circuit tubular steel poles would be installed and the high-capacity conductors (795 Drake ACCR) would be installed on the new poles.
- On the eastern portion of the Morongo land, 30 pairs of new double-circuit lattice steel towers would replace the existing single-circuit towers; high capacity conductors (795 Drake ACCR) would be installed on these new towers.

Segments 3, 4, and 6 would be configured as follows:

- As with the Proposed Project, reconfigure San Bernardino Junction to accommodate the new double-circuit tower line north of the existing double-circuit towers. This means that the Devers–San Bernardino and El Casco–San Bernardino circuits would be on the northern side of the existing ROW in Segment 3.
- Re-use the existing double-circuit 220 kV towers and reconductor those two circuits using new 795 Drake ACCR conductor.

- Remove the two single-circuit 220 kV structures and replace them with a single set of new double-circuit towers having the same strength capabilities and spacing as the Proposed Project double-circuit towers, and install new 795 Drake ACCR conductor for both circuits. The single set of new double-circuit towers would be north of the existing double-circuit towers in Segment 3 and in Segment 4 near El Casco Substation. In the remainder of Segment 4 and in Segment 6, the single set of new double-circuit towers would be south of the existing double-circuit towers.
- Reconfigure Banning Junction to eliminate individual 220 kV circuit crossings. To avoid circuit crossings at Banning Junction, the Devers–San Bernardino and Devers–El Casco circuits would be on the northern side of the ROW for all of Segments 4, 5, and 6, and both Devers–Vista circuits would be on the southern side of the ROW.

The new double-circuit towers that would be constructed would be located at least 50 feet north of the existing double-circuit towers in Segment 3 and at least 50 feet south of the existing double-circuit towers in Segments 4 and 6. The types of new double-circuit towers in Segments 3 through 6 would have the strength capabilities and spans of the Proposed Project double-circuit towers and would be capable of future upgrade to the Proposed Project conductors. The strength of the newly built towers would mean that the new double-circuit structures could be reconductored in the future with the SCE-proposed 2B-1590 kcmil conductor, although a double-bundled conductor is not part of the alternative considered here.

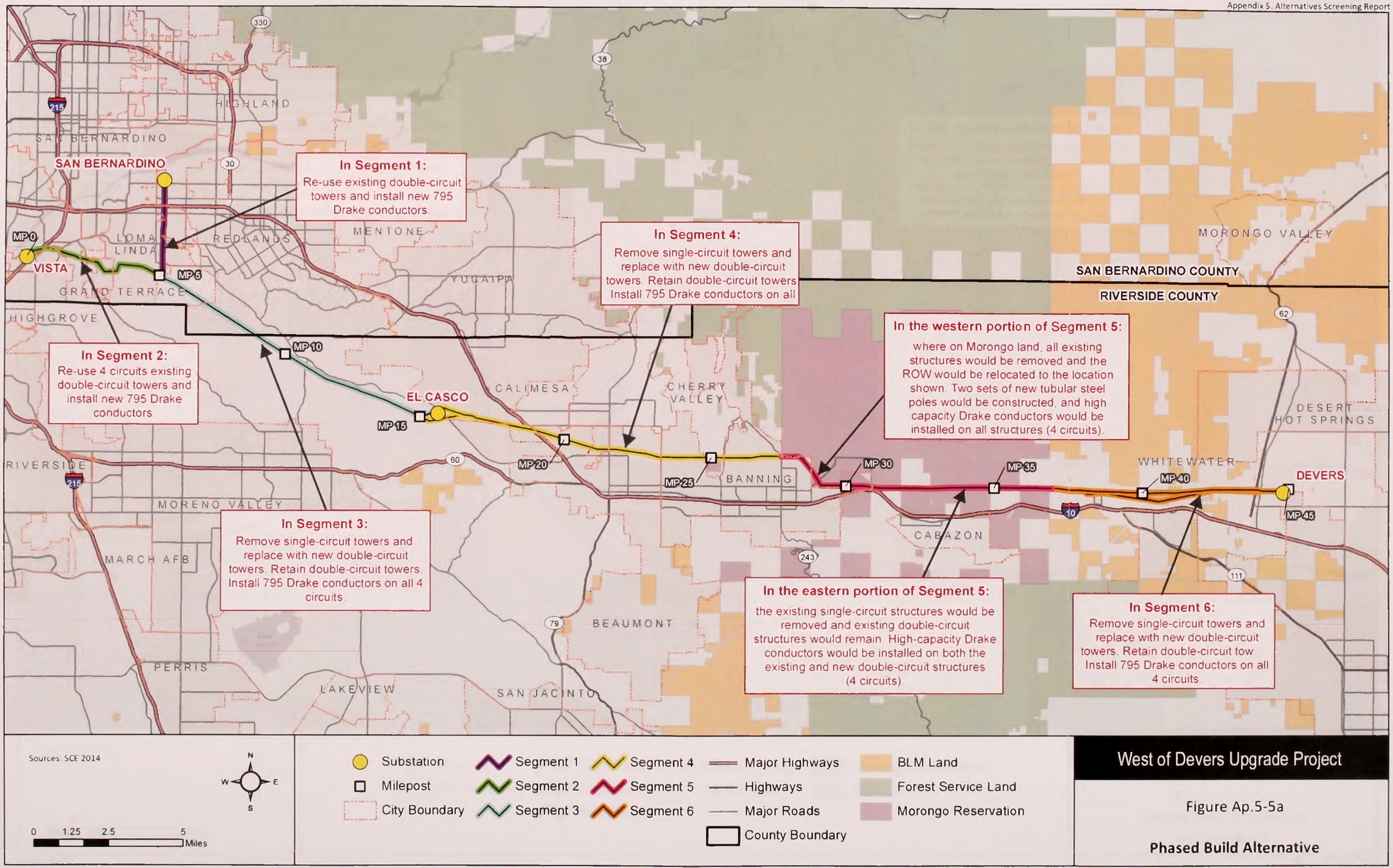
The Proposed Project would give the WOD corridor a large planning margin of capacity to handle power flow during all conditions and for future growth. Independent power flow modeling was conducted to assess the loading in each of the corridor's circuits, during normal operations and during times when one or more circuits are out of service. Attachment 1 to Appendix 5 presents data and discussion that compare the ability of the Proposed Project with the Phased Build Alternative to handle anticipated power flow loads.

Consideration of CEQA/NEPA Criteria

Project Objectives, Purpose and Need

Basic Project Objective 1, Increase system deliverability: The Phased Build Alternative would allow SCE to fully deliver about 3,000 MW of the output from new generation projects, so it fully achieves Basic Project Objective 1 by providing an increase in deliverability that is 1,400 MW over the present capability of 1,600 MW and at least 2,200 MW over the capability of the WOD 220 kV corridor before the Proposed Project was planned, which was limited to approximately 550 MW. Based on power flow modeling completed for this alternative (see results in Table A3 in Attachment 2 to this appendix), this alternative satisfies the CAISO's 2024 Reliability Base Case, which includes specific generation projects that the CAISO has determined to be most likely to be constructed plus a scenario of 1,400 MW from IID to the CAISO.

Section A.2.1.4.1 of this EIR/EIS describes the generation projects whose capacity is expected to be carried by the Proposed Project, and explains how these projects are categorized for the EIR/EIS. Table Ap.5-3 shows the projects accommodated and likely to be made deliverable by the Phased Build Alternative.



In Segment 1: Re-use existing double-circuit towers and install new 795 Drake conductors.

In Segment 2: Re-use 4 circuits existing double-circuit towers and install new 795 Drake conductors.

In Segment 3: Remove single-circuit towers and replace with new double-circuit towers. Retain double-circuit towers. Install 795 Drake conductors on all 4 circuits.

In Segment 4: Remove single-circuit towers and replace with new double-circuit towers. Retain double-circuit towers Install 795 Drake conductors on all

In the western portion of Segment 5: where on Morongo land, all existing structures would be removed and the ROW would be relocated to the location shown. Two sets of new tubular steel poles would be constructed, and high capacity Drake conductors would be installed on all structures (4 circuits).

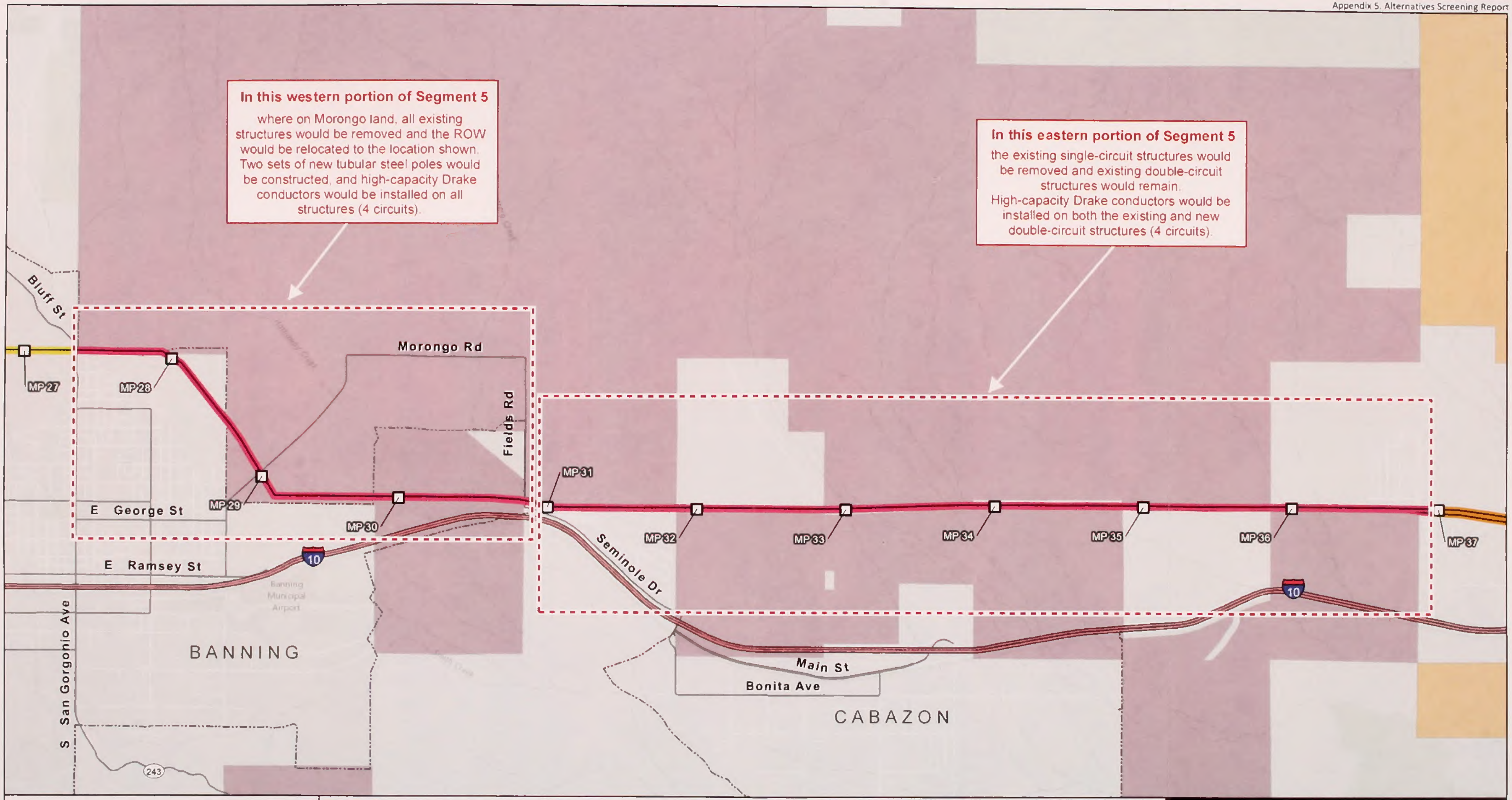
In the eastern portion of Segment 5: the existing single-circuit structures would be removed and existing double-circuit structures would remain. High-capacity Drake conductors would be installed on both the existing and new double-circuit structures (4 circuits).

In Segment 6: Remove single-circuit towers and replace with new double-circuit towers. Retain double-circuit tow Install 795 Drake conductors on all 4 circuits.

West of Devers Upgrade Project

Figure Ap.5-5a

Phased Build Alternative



In this western portion of Segment 5

where on Morongo land, all existing structures would be removed and the ROW would be relocated to the location shown. Two sets of new tubular steel poles would be constructed, and high-capacity Drake conductors would be installed on all structures (4 circuits).

In this eastern portion of Segment 5

the existing single-circuit structures would be removed and existing double-circuit structures would remain. High-capacity Drake conductors would be installed on both the existing and new double-circuit structures (4 circuits).

Sources: SCE 2014

West of Devers Upgrade Project

Figure Ap.5-5b
Phased Build Alternative on Segment 5

Basic Project Objective 2, Support renewable energy goals: This alternative would facilitate progress toward achieving California's RPS goals by adding more than 800 MW of transfer capacity for renewable energy projects located east of Devers Substation while accommodating at least 1,000 MW of future growth.[2] This would support increased import of renewable generation into the Los Angeles basin.

Table Ap.5-3. Projects Accommodated by the Phased Build Alternative

Projects Considered to be Connected Actions	Projects Considered to be Cumulative	Projects Considered to Fill Remaining Growth-Inducing Capacity
Analyzed in Section D, Environmental Analysis	Analyzed in Section E, Cumulative Scenario and Impacts	Analyzed in Section F Other CEQA and NEPA Requirements
• Palen Solar Power Project (500 MW solar thermal, CAISO Queue 365) • EDF Desert Harvest (150 MW solar PV, CAISO Queue 643AE) • 50 MW Solar PV Project connecting to Blythe–Eagle Mountain 161 kV line (CAISO Queue 421) • 250 MW Solar PV Project Connecting at Red Bluff Substation 230 kV (CAISO Queue 1070) • 224 MW Solar PV Project connecting at Colorado River Substation 230 kV (CAISO Queue 576) • 150 MW Solar PV Project connecting at Colorado River Substation 230 kV (CAISO Queue 970) • 150 MW Solar PV Project Connecting at Colorado River Substation 230 kV (CAISO Queue 1071)	• Blythe Energy Project, Phase II (570 MW gas-fired combined cycle plant) • NextEra Genesis Project and NextEra McCoy Project (250 MW solar trough; 250 MW solar PV) • NextEra Blythe Project (485 MW solar PV) • IID Path 42 Upgrades (230 kV transmission line) • CAISO Queue 798 (221 MW solar PV connecting at Colorado River Substation; energy only)	• None accommodated by Phased Build Alternative
1,474 MW generation from Connected Actions accommodated by Phased Build Alternative (Same as the Proposed Project)	**1,776 MW generation from Cumulative Projects accommodated by Phased Build Alternative, plus additional power flow across Path 42 Upgrades** (Note: this does not include the Delaney–Colorado River 500 kV Transmission Line that could be accommodated by the Proposed Project.)	**0 MW generation to fill Growth-Inducing Capacity accommodated by Phased Build Alternative** (1,571 MW less than the Proposed Project)

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[2] The EIR/EIS preparers asked CPUC RPS Staff to test the "RPS Calculator" to show how future renewable resource portfolios might change with a smaller upgrade to WOD than SCE has proposed. With RPS Calculator V.5: there would be no additional transmission capacity needed elsewhere in the state to make up for generation decreased in Riverside East; and renewable generation in Westlands or other zones (including San Diego South and Solano) would replace the generation decreased in Riverside East, using existing transmission capacity available in the other zones. With RPS Calculator V.6.1: there would be no impact on the generation selected in Riverside East or elsewhere.

Basic Project Objective 3, Maximize remaining space in the corridor: The Phased Build Alternative would meet this objective by removing the existing single-circuit towers to create space for future transmission lines, including a 500 kV line within the ROW, although less space would be available than with the Proposed Project. In this alternative, some new double-circuit towers in Segments 4 and 6 (as defined in the Tower Relocation Alternative) would be placed further from the south edge of the ROW, resulting in the structures being 50 feet farther from residences in Segments 4 and 6 than under the Proposed Project. There would remain adequate space within the ROW (up to 175 feet) for transmission expansion, if needed by SCE in the future, as shown in Table Ap.5-2. As with the Proposed Project, any future 500 kV line within the ROW would need to cross the 220 kV circuits at or near the El Casco Substation. See EIR/EIS Section E.2.3.2 for additional information on this Cumulative Transmission Scenario.

Feasibility

Legal and Regulatory Feasibility. The Phased Build Alternative appears to be feasible considering legal and regulatory factors. The Proposed Project has been approved by the Morongo Tribe in a ROW Agreement with SCE (see EIR/EIS Appendix 3), and there is no language in the Agreement that conflicts with the components of this alternative.

Technical Feasibility. The technical feasibility of the alternative has been evaluated based on SCE's responses to CPUC data requests, augmented by independent reviews in two technical areas: the ability of the existing structures to be reused and reconductored, and the ability of the new alternative conductor to handle anticipated power flow loads. Based on these efforts, this alternative appears to be feasible based on the following considerations.

Using the lighter-weight Drake 795 conductors on the existing double-circuit towers would increase the capacity of the circuits and postpone the impacts of rebuilding the towers as proposed. These conductors are 70 percent as heavy as the existing 1033.5 kcmil ACSR used in the corridor.[3] SCE Response to Data Request ALT-18a indicates that approximately 20-30 percent of the existing double-circuit structures would require strengthening or replacement in order to support the 795 Drake ACCR conductor in this alternative.

- **Use of ACCR.** While ACCR is not one of SCE's typical conductor types, high capacity conductors are commonly used by major utilities. High Temperature Low Sag (HTLS) options exist to the proposed 1590 ACSR conductors; these HTLS conductors are commercially available and need to be explored further for feasibility. HTLS conductors are a proven and accepted technology in the electric utility industry for upgrading capacity in existing corridors and on existing structures as well as for new line construction. HTLS conductors can normally operate at much higher temperatures. Therefore, it is possible to greatly increase power transfer capacity, compared to an equivalent ACSR type of conductor, while maintaining required clearances, because of the low sag nature of HTLS conductors. ACCR conductor was first commercially installed in the United States in 2001 by Xcel Energy and at a 2005 test site operated by San Diego Gas & Electric (SDG&E) in Oceanside (CEC, 2008). since that time it has been used domestically by multiple utilities, such as Pacific Gas and Electric (PG&E) near Santa Clara, Western Area Power Administration, Arizona Public Service, Silicon Valley Power, Alabama Power and Platte River Authority at voltages up to 230 kV and for critical generation tie lines. This type conductor and the comparable aluminum conductor composite core (ACCC) conductor are also used internationally by utilities like British Columbia Transmission Corporation and Shanghai Power. Another common HTLS conductor used by PG&E is the aluminum conductor steel supported (ACSS) type, which is used in new circuits serving the San Francisco peninsula and East Bay area including the Eastshore, San Mateo, and Dumbarton Substations.

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[3] ACSR and ACCR weights and capacities are derived from vendor technical properties fact sheets. Rated ampacity at 75° C for ACSR and 210° C for ACCR. (3M, 2015) http://solutions.3m.com/wps/portal/3M/en_US/EMD_ACCR/ACCR_Home/TechnicalInfo/ProductDataSpecs/

- **ACCR is not one of SCE's typical conductor types.** As a result, SCE would have to develop a new spare-parts inventory system and implement worker training for operation and maintenance of this conductor type.
- **Line losses:** ACCR material has higher electrical losses. These losses would result in economic consequences, but these would have to be compared to the reduced construction cost achieved from the reuse of the existing 220 kV towers.
- **Vacant space within ROW:** This alternative would result in adequate space in the ROW for future expansion by removing the existing single-circuit towers, although the amount of space remaining would be limited by the locations of the existing double-circuit towers that would be reused and reconductored. Based on the locations of the existing double-circuit towers, there would remain adequate space within the ROW (up to 175 feet) for transmission expansion, if needed by SCE in the future.

Construction Timeframe. Because this alternative would avoid near-term construction related to removing all towers, the reuse and reconductoring of the existing double-circuit towers would result in an overall construction duration that would be somewhat shorter than that of the Proposed Project.

Reliability. Like the Proposed Project, the Phased Build Alternative would comply with all reliability requirements of NERC, FERC, and the CPUC.

Environmental Advantages

The Phased Build Alternative would avoid many environmental impacts of the Proposed Project by retaining and reconductoring the existing double-circuit towers with high-performance conductor. In addition, by moving towers in residential areas farther from the south edge of the ROW, visual impacts are reduced. These advantages are summarized as follows:

- **Construction and Ground Disturbance.** This alternative would reduce construction impacts (noise, air emissions, ground disturbance, traffic) because the existing double-circuit towers would remain in place, rather than being removed and replaced. This alternative would avoid the Proposed Project impacts related to removing all towers by reusing existing double-circuit structures for as long as possible. The existing reconductored towers would be replaced only after this alternative reaches the electrical capacity of its configuration.
- **Visual Resources.** This alternative would reduce significant visual impacts to residences on south side of corridor (Beaumont, Calimesa, Banning, Whitewater) because existing towers are closer to center of ROW than the Proposed Project towers. This alternative would achieve the same visual benefit of the Proposed Project from removing the single-circuit towers, resulting in a less cluttered ROW with similar tower styles.

Environmental Disadvantages

There are two potential disadvantages of the Phased Build Alternative:

- **Later Construction of Phased Build Components.** One beneficial feature of this alternative is that it would reduce the amount of near-term construction activities required to removing the double-circuit towers (as required for the Proposed Project). The Phased Build Alternative may provide adequate capacity for 10 years or more (based on the CAISO's Reliability Scenario). However, depending on other transmission system upgrades, it is possible that over the longer-term, the implementation of this alternative could require future construction activities to increase system capacity.

- **Operations and Maintenance.** Using ACCR or other high-performance conductors would introduce new conductor materials that are not standard to SCE's routine operations. These conductors and spare parts, including specialized splices or connectors would require storage, and operating the system would involve additional training for SCE personnel.

Alternative Conclusion

Retained for Analysis. The Phased Build Alternative is retained for EIR/EIS analysis because it would reduce the environmental impacts of the Proposed Project. It would achieve all three Basic Project Objectives. In addition, this alternative is technically feasible. The alternative conductor type has been proven and is in use by other utilities.

5. Alternatives Eliminated from Detailed Consideration

5.1 Introduction

This section describes the 11 alternatives that were evaluated but eliminated as a result of the alternatives screening process (Section 2, Description of Alternatives Evaluation Process). The alternatives eliminated include the following:

- 500 kV Towers Alternative
- Segment 4 Underground Alternatives in Calimesa, Beaumont, and Banning
- Segment 5 Morongo Central Route Alternative (original PEA Proposed Route)
- Segment 5 Morongo Existing 220 kV Route Alternative (Existing ROW)
- East Banning–Morongo Alternative
- Devers-Beaumont 500 kV Alternative (SCE System Alternative 1)
- Red Bluff–Valley-Serrano 500 kV Alternative (SCE System Alternative 2)
- Reduced Build Alternative Option 1
- Reduced Build Alternative Option 2a
- Reduced Build Alternative Option 2b
- High-Performance Conductor Alternative

5.2 500 kV Towers Alternative

This alternative was developed to reduce the potential cumulative impacts resulting from construction of a future 500 kV transmission line in addition to the 220 kV upgrades that would be in place at that time. The alternative was eliminated because the Morongo Agreement specifically defines installation of 220 kV towers. Because the Tribe has not agreed to allow a 500 kV line across its land, the alternative would be infeasible.

Alternative Description

This alternative would place a future 500 kV line (requiring taller structures) near the center of the ROW, with the lower voltage 220 kV lines nearer to the outside edges of the ROW. This configuration could only be achieved if future ROW needs are anticipated and towers built in 2016-2020 are located accordingly.

In general, the Proposed Project would install pairs of 220 kV towers near one edge of the ROW. This positioning would leave space for future lines, including a 500 kV line, in the vacant portion of the ROW. However, this plan results in two significant impacts:

- The proposed 220 kV towers would be very near one side of the ROW, creating significant visual impacts; and
- Given the location of the 220 kV towers, a future 500 kV line would need to be located closer to the opposite edge of the ROW, creating additional significant visual impacts on that edge of the ROW.

The 500 kV Towers Alternative anticipates a future 500 kV line being developed in the ROW, and therefore suggests that the current construction process should include (a) erection of structures suitable for eventual use at 500 kV, and (b) those new taller towers should be located near the center of the ROW. In contrast to the pairs of 220 kV towers of the Proposed Project, the outer tower in this alternative would be a 220 kV tower, and the one nearer the center of the ROW would be a 500 kV structure. Initially, the lines on both structures would be energized at 220 kV, but when system requirements justify more capacity, the 500 kV structure would be energized at 500 kV.

The new 500 kV towers would be strung for 500 kV service using a double-circuit configuration with bundled conductors (2B-2156 kcmil) while being initially energized at 220 kV. This configuration would remain in 220 kV service until SCE is able to develop the remaining components of a 500 kV system in this corridor and at the affected substations. This could ultimately involve future 500 kV service between the Devers Substation and the Vista Substation or farther west to SCE's Rancho Vista Substation near Etiwanda, in Rancho Cucamonga.

At some future time when 500 kV service becomes needed in addition to the existing 220 kV service, SCE would presumably construct the second set of double-circuit 220 kV towers on the opposite side of the ROW from the initial 220 kV towers. This would leave the ultimate future configuration of the ROW under this alternative with the two lines of 220 kV towers on either side of the 500 kV line in the center of the ROW in Segments 2, 3, 4 and 6. This alternative would not facilitate adding 500 kV service through Segment 1 (San Bernardino Substation to San Bernardino Junction) where the potential for blow-out of lines over the edge of the ROW would preclude using taller and wider-spaced structures.

The configuration of this alternative by segment is described as follows:

Segment 1. This alternative would not affect Segment 1. This segment would remain as currently proposed by SCE.

Segment 2. In Segment 2 (Vista Substation to San Bernardino Junction), existing lower-voltage (115 kV) circuits would need to be relocated to allow placement of the 500 kV structures in the widest portions of the ROW, and existing 220 kV structures in the northern portion of the ROW would need to be retained and used by the relocated lower-voltage circuits.

Segments 3, 4, and 6. The 500 kV Tower Alternative would position the tallest structures farther from the edge of the ROW than would be the case in the future if the Proposed Project were to be developed with two pairs of 220 kV towers. The Proposed Project's positioning would preempt the ability to locate a future 500 kV line near the center of the ROW. This alternative would allow the future 500 kV line to be farther from the edge of the ROW in Segments 3, 4, and 6.The 500 kV structure line in this alternative would be located at least 75 feet from the edge of the ROW in the areas where the ROW is split (i.e., in Segment 6).

Segment 5. This alternative would not change the SCE Proposed Project for Segment 5 on the Morongo reservation, because only the Proposed Project has been approved by the Morongo Tribe in a ROW Agreement with SCE (see EIR/EIS Appendix 3). This alternative would proceed on the Morongo reservation only if it were approved by the Morongo Band of Mission Indians. A new ROW Agreement would need to be issued in order for this alternative to proceed.

Figure Ap.5-6a shows the portions of the WOD corridor that would be replaced with 500 kV components instead of the proposed 220 kV towers. Figures Ap.5-6b through Ap.5-6e illustrate an example of a double-circuit 500 kV structure design, which would be approximately 190 feet tall. For additional information and a discussion of the cumulative impacts of the future 500 kV transmission line, see EIR/EIS Section E.2.3 (Cumulative Impacts, Future 500 kV Transmission Line in WOD Corridor).

Consideration of CEQA/NEPA Criteria

Project Objectives, Purpose and Need

Basic Project Objective 1, Increase system deliverability: The 500 kV Towers Alternative would provide an increase in deliverability of more than 2,200 MW and would meet this objective. The deliverability would be the same as that of the Proposed Project.

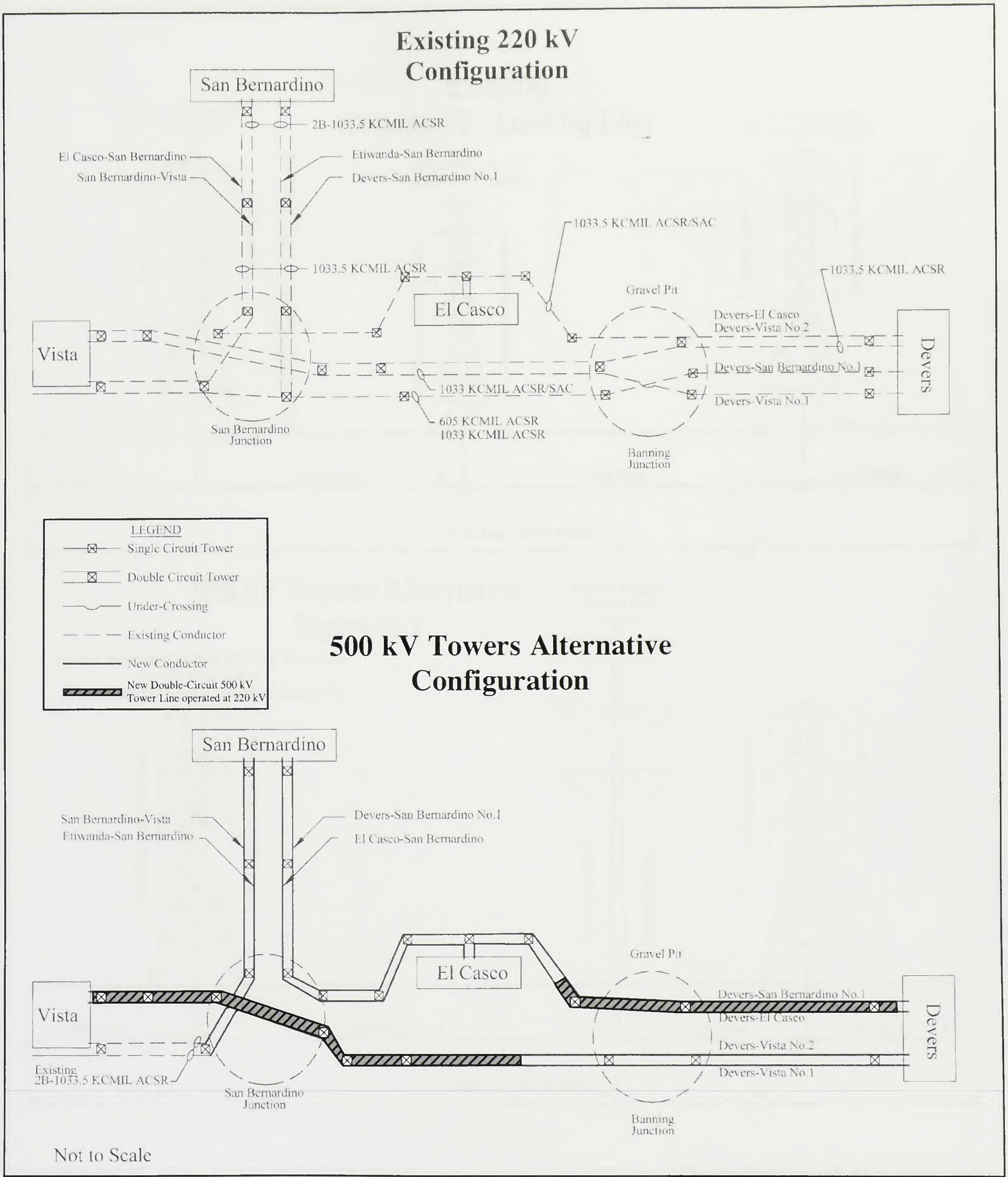
Basic Project Objective 2, Support renewable energy goals: This alternative would facilitate progress toward achieving California's RPS goals.

Basic Project Objective 3, Maximize remaining space in the corridor: The 500 kV Towers Alternative would be located within and would maximize the effective and appropriate use of SCE's existing transmission ROW. The construction of 500 kV towers at this time as an alternative to one set of the Proposed Project's 220 kV towers, rather than in the future, would ensure that the placement of the 500 kV line could generally occur near the center of the ROW rather than be forced to occur on the ROW edge. Similar to the Proposed Project, this alternative would ensure that adequate space remains within the ROW for additional transmission expansion, if needed by SCE in the future.

Feasibility

Legal Feasibility. The Proposed Project and its 220 kV configuration has been approved by the Morongo Tribe in a ROW Agreement with SCE (see EIR/EIS Appendix 3). Therefore, construction of 500 kV structures under this alternative would not be legally feasible within Segment 5. Installing 500 kV towers through the Morongo reservation in Segment 5 would require a new ROW agreement from the Morongo Band of Mission Indians. If SCE defines a future need for a 500 kV line and SCE is not able to obtain an agreement with the Morongo regarding routing such a line across the reservation, then SCE would have to explore other ways to meet its service requirements without crossing tribal land. As a result, some of the 500 kV structures installed under this alternative may not be useable if a future 500 kV line is never allowed on Morongo land.

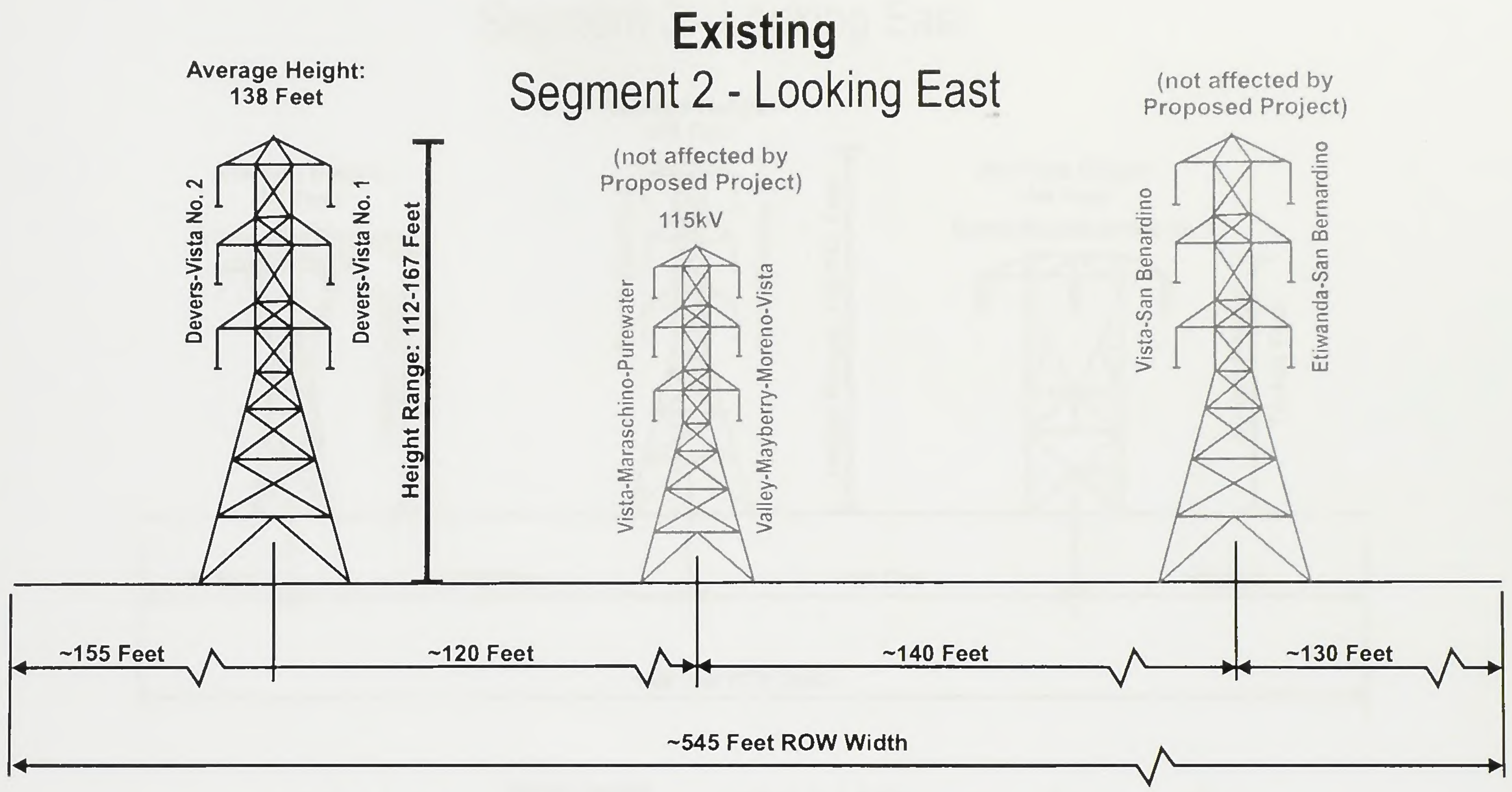
Additionally, if SCE were successful in obtaining a future agreement with the Morongo on the routing of a future 500 kV line across the Morongo reservation, the location of that line may be different than the current corridor location. Significant changes in the location of routing a potential future 500 kV line across the reservation could impair SCE's ability to align that routing with the placement of 500 kV structures in Segments 4 and 6, requiring SCE to either move those structures or leave them in place and continue to operate the line at 220 kV (SCE Response to CPUC Data Request ALT-20a; SCE, 2014).

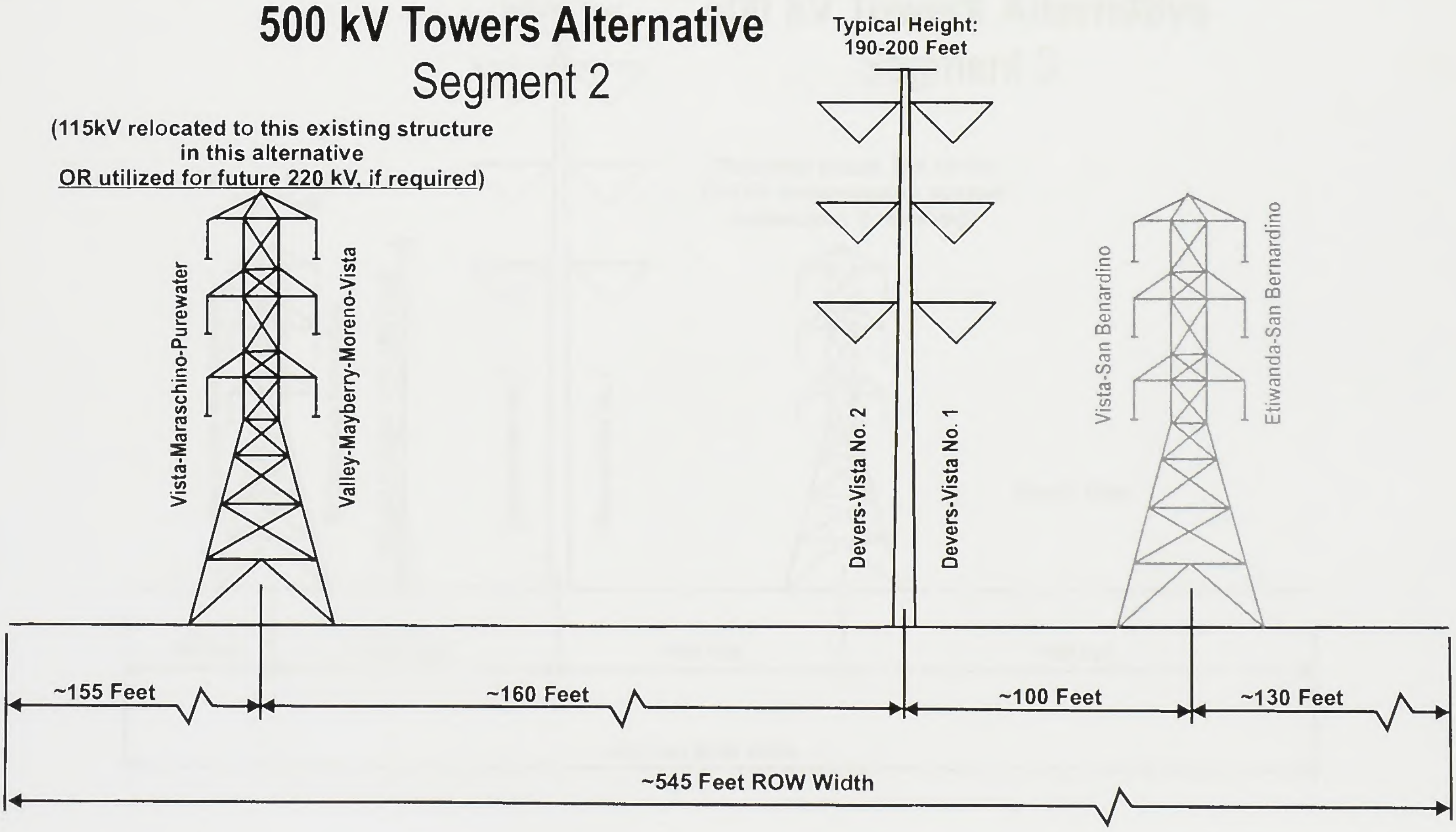


Source: SCE, 2013.

West of Devers Upgrade Project

Figure Ap.5-6a
Existing and 500 kV Towers Alternative Configuration

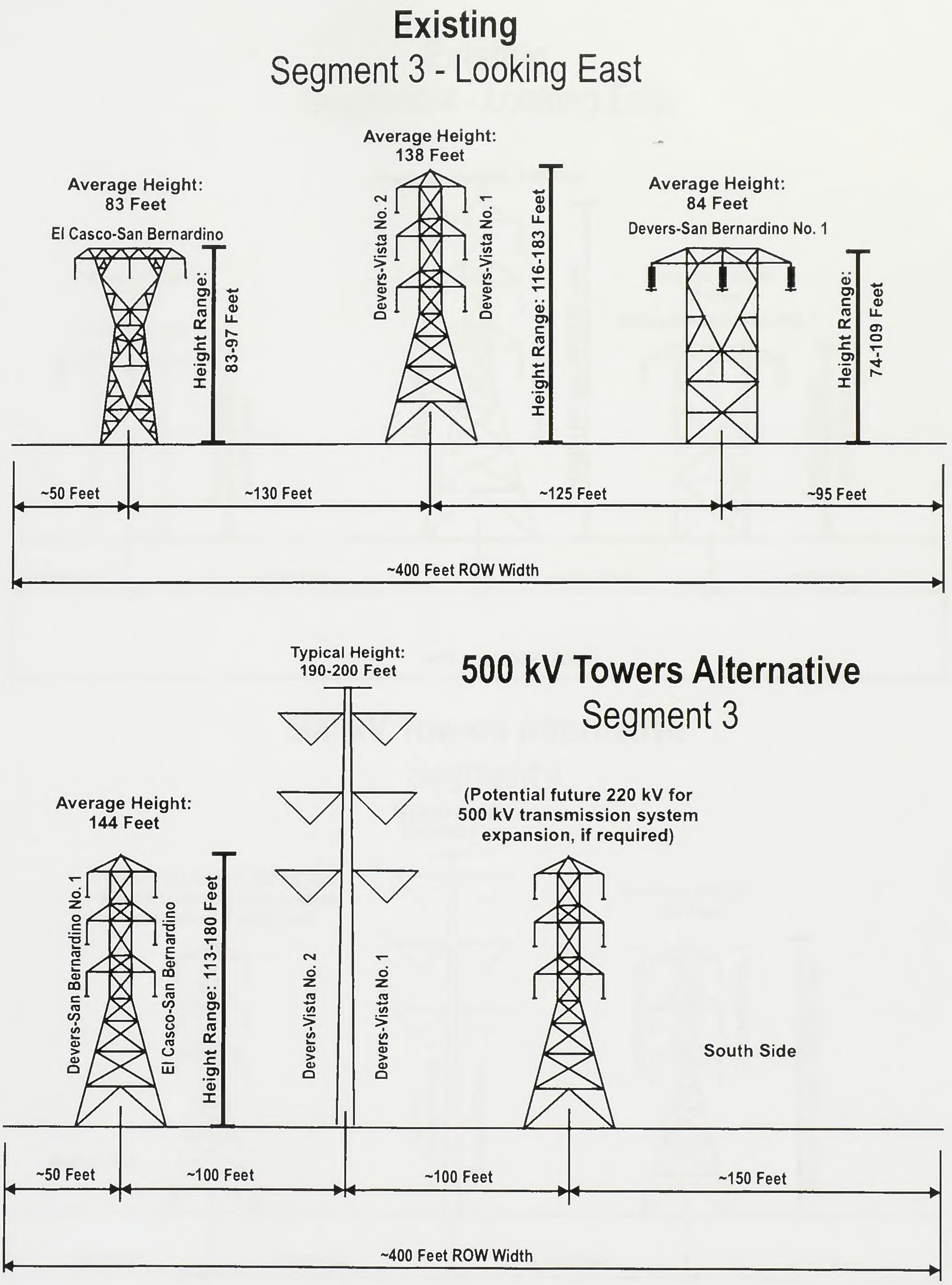




Source: SCE, 2014.

West of Devers Upgrade Project

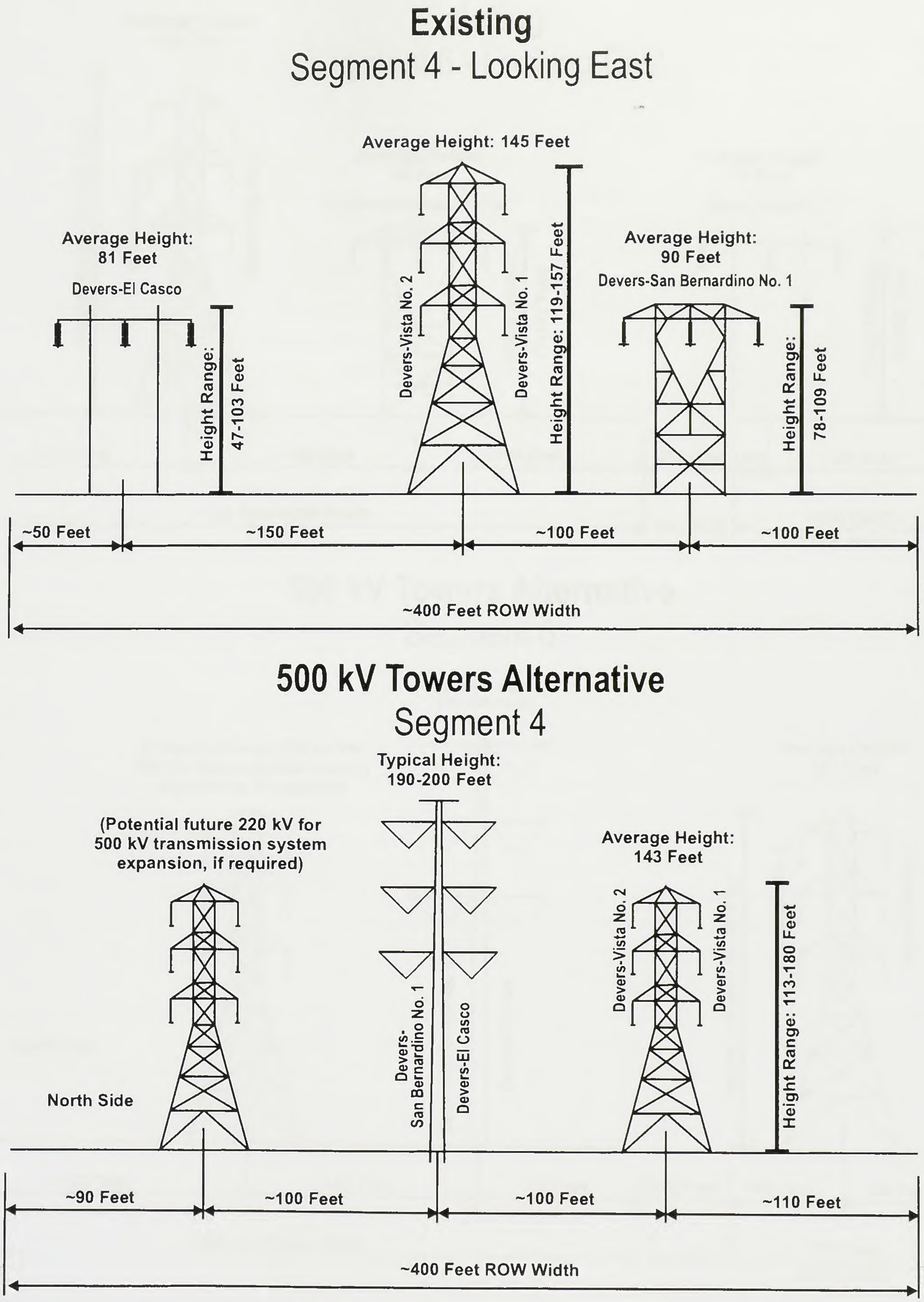
Figure Ap.5-6b
500 kV Towers Alternative Corridor Profile - Segment 2



Source: SCE, 2014.

West of Devers Upgrade Project

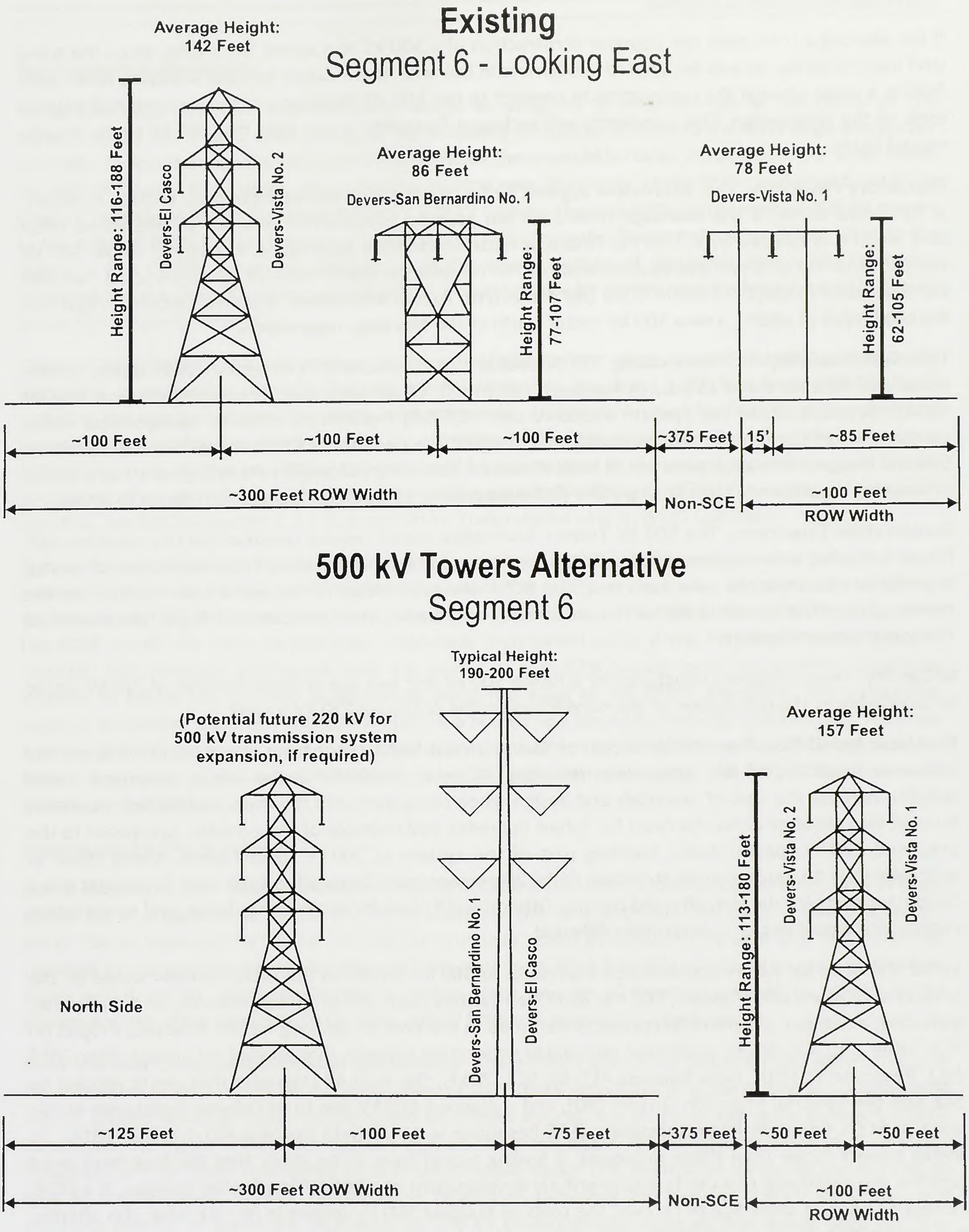
Figure Ap.5-6c
500 kV Towers Alternative Corridor Profile - Segment 3



Source: SCE, 2014.

West of Devers Upgrade Project

Figure Ap.5-6d
500 kV Towers Alternative Corridor Profile - Segment 4



Source: SCE, 2014.

West of Devers Upgrade Project

Figure Ap.5-6e
500 kV Towers Alternative Corridor Profile - Segment 6

If the Morongo Tribe does not approve construction of a 500 kV line across tribal land, given the tribal land ownership layout and designated Wilderness in the area, there would be legal feasibility issues with finding a route around the reservation to connect to the 500 kV structures at the western and eastern ends of the reservation. The regulatory and technical feasibility issues with this 500 kV route are discussed below.

Regulatory Feasibility. This alternative appears to be feasible considering regulatory factors. However, as discussed above, if the Morongo Tribe does not approve construction of a 500 kV line across tribal land when it is needed by SCE in the future, a route around the reservation to connect to the 500 kV structures at the western and eastern ends of the reservation would need to be constructed. See also the discussion in EIR/EIS Section C.6.3 (No Project/No Action Alternative Scenario, Option 1) regarding the challenges of adding a new 500 kV circuit south of the Morongo reservation.

Technical Feasibility. SCE has existing 500 kV double-circuit structures in its system, so its ability to construct and operate these structures has been confirmed. While technically feasible to design a line for 500 kV service, it would not operate at 500 kV until SCE fully implements a 500 kV configuration within corridor, which could make this an impractical design if the need for 500 kV service never materializes. Detailed design of this alternative would need to address relocating existing circuits in Segment 2 as a means of avoiding expansion of the existing ROW (SCE Response to CPUC Data Request ALT-20c; SCE, 2014).

Construction Timeframe. The 500 kV Towers Alternative would require construction in a sequence different from that currently proposed by SCE. Given the need for SCE to take certain circuits out of service in order to construct the new towers in the ROW, the installation of the 500 kV structures near the center of the ROW would likely make construction sequencing more complex, adding a few months to the construction schedule.

Reliability. The installation structures for a future 500 kV line and use of those facilities at 220 kV would be as reliable as the installation of the conductors on the proposed 220 kV towers.

Economic Feasibility. The additional cost of double-circuit 500 kV structures raises concerns about the economic feasibility of this alternative. Installing 45 miles of 500 kV double-circuit structures would notably increase the cost of materials and design when compared with the Proposed Project; however, it could also avoid or delay the need for future upgrades and redesign of the corridor. Compared to the proposed 220 kV specifications, building part of the system at 500 kV specifications would result in approximately 40 percent more structure costs, 20 percent more foundation costs, and 25 percent more conductor costs for the two affected circuits. Other overall costs for engineering, labor, and construction contracting would not be substantially different.

While the need for future transmission expansion to 500 kV service in the WOD corridor would be the subject of a future CPUC review, SCE has identified various plans and proposals that rely on the corridor, including: a number of generation projects identified at the time of applying for the Proposed Project (in PEA Table 1.1; SCE, 2013), additional renewable generation projects that applied for service after 2013 (SCE Response to CPUC Data Request ALT-10; SCE, 2014), the Path 42 Upgrades that are in process by SCE and the Imperial Irrigation District (IID), and a planned 500 kV line from Delaney Substation in Arizona to SCE's Colorado River Substation (SCE Response to CPUC Data Request ALT-10; SCE, 2014). To install towers larger than those proposed, a finding would have to be made that the long-term need justifies the additional costs to facilitate orderly development of a 500 kV line for the corridor. If a CPUC review decides to allow SCE to recover the costs of building 500 kV towers in its rate base, this alternative would likely be economically feasible. Since such a determination has not yet been made, this analysis assumes that this alternative is potentially economically feasible at this time.

Environmental Advantages

Visual Resources. Because this alternative would be designed to maximize use of the center of the ROW, it would not require construction of the proposed structures as close to the ROW edge as they are currently designed under the Proposed Project. While there would be taller structures in the ROW under the 500 kV Towers Alternative, they would be located near the center of the ROW, and would not be as close to residences as the Proposed Project's 220 kV towers. The proximity of the nearest 220 kV towers to the edge of ROW in this alternative would be the same as in the Tower Relocation Alternative. In the future, a 220 kV line would be constructed in the vacant portion of the ROW. These 220 kV towers would be smaller than 500 kV structures, which may otherwise be constructed in this location the future under the Proposed Project.

Ground Disturbance. This alternative would potentially reduce some ground-disturbing impacts by increasing span lengths between the new 500 kV structures (to about 1,300 feet from 800-900 feet), reducing the number of new structures, and potentially delaying the need for future construction and reconstruction within the WOD corridor by providing 500 kV structures in advance of the need for a 500 kV circuit. In the future, 220 kV towers would be constructed in the vacant space instead of 500 kV structures as contemplated in the discussion of the cumulative impacts of the future 500 kV transmission line, see EIR/EIS Section E.2.3 (Future 500 kV Transmission Line in WOD Corridor).

Cumulative Impacts from Future Transmission Expansion. This alternative may avoid or delay the environmental impacts of future transmission expansion. If it becomes necessary to construct a single- or double-circuit 500 kV transmission line in the future, placement of the 500 kV lines near the center of the ROW would site them farther from residences than would occur if the Proposed Project is implemented. This structure placement near the center of the ROW would avoid the project cumulative impacts of future 500 kV lines being placed along the edge of the ROW. Therefore, the cumulative impacts associated with the Proposed Project of a 500 kV line would be reduced substantially. Although a future 220 kV line would need to be constructed, no additional 500 kV towers would be required for future expansion in the cumulative scenario under this alternative since the 500 kV towers would already be installed.

Environmental Disadvantages

Visual Resources. This alternative would require installation of 500 kV double-circuit structures in place of one set of proposed double-circuit 220 kV towers at this time and potential construction of a second set of 220 kV towers in the future. The 500 kV structures would be substantially taller and more massive, resulting in more visible structures than with the proposed 220 kV double-circuit structures. In addition, there would not be visual consistency of design since one set of structures would be 220 kV lattice towers and the other would likely be taller 500 kV lattice or monopole structures.

Land Use and Construction-Related Disturbance. The primary difference between this alternative and the Proposed Project would be the installation of the 500 kV structures in place of one set of proposed 220 kV towers. Although fewer towers would be needed overall, due to the longer spans between 500 kV structures, the higher-voltage structures would be taller and would require greater levels of ground disturbance for each pole. The overall level of construction under this alternative would be comparable to that of the Proposed Project. Disturbances related to removing the existing 220 kV structures and installing one set of proposed double-circuit 220 kV towers would occur as they would with the Proposed Project. Additional access roads could be needed to reach the 500 kV structures that would be sited at different intervals and spans than the 220 kV towers.

Future Impacts from Moving Future Transmission Expansion Around the Morongo reservation. If SCE does not reach an agreement with the Morongo Tribe allowing placement of a future 500 kV line across tribal land, construction of a new 500 kV line from the existing endpoints of the 500 kV structures on the western and eastern ends of the reservation (Segments 4 and 6) would result in extensive ground disturbance from a longer transmission line. As described for the No Project Alternative (Option 1), installing an additional 500 kV circuit south of I-10 in the San Bernardino National Forest and existing residential areas could create extensive impacts to sensitive land uses, and to biological and cultural resources. If a new separate 500 kV corridor is constructed by SCE west of the Devers Substation to avoid the reservation, then the existing WOD corridor would have larger 500 kV structures installed that would not be utilized.

Alternative Conclusion

Eliminated. This alternative would meet all three Basic Project Objectives. It is potentially economically feasible, although a future determination would need to be made as to the cost allocation. Installation of 500 kV structures and operation at 500 kV in the future would require a new agreement between SCE and the Morongo Tribe to be legally feasible. If an agreement for the 500 kV line is reached with the Morongo Tribe, the cumulative impacts of future transmission expansion would be reduced with the implementation of the alternative now. However, if the Morongo Tribe does not approve a 500 kV line when it is needed in the future, then it would not be legally feasible to construct a 500 kV line across tribal land. Because future use of the corridor at 500 kV would not be legally feasible without approval by the Morongo Tribe, this alternative has been eliminated from full evaluation in this EIR/EIS.

5.3 Segment 4 Underground Alternatives in Calimesa, Beaumont, and Banning

This alternative was developed in response to scoping comments requesting consideration of underground segments. It was eliminated because construction impacts would be substantially more severe, and the impacts of the overhead Proposed Project can be mitigated with other overhead alternatives (see Section 4 of this appendix, Alternatives Retained for Analysis).

Alternative Description

An underground alternative was considered by the EIR/EIS team in response to public comments made during the scoping periods to consider undergrounding the transmission lines in the Cities of Calimesa, Beaumont, and Banning (Segment 4). Three underground route options were considered to reduce visual impacts to residences in these areas, as shown in Figure Ap.5-7.

- **Underground in Transmission Corridor.** Within the vicinity of residences in the Cities of Calimesa, Beaumont, and Banning, the transmission line would transition from overhead to underground and would be installed underground within SCE's existing ROW.
- **Underground North of Transmission Corridor (Beaumont).** This underground route option would transition from overhead to underground at North Deodar Drive near MP 19.2. From there the route would travel north in North Deodar Drive to Brookside Avenue where it would turn east and be installed within Brookside Avenue. At Beaumont Avenue, Cherry Avenue or Highland Springs Avenue the route would turn south within the roadway until it rejoins the proposed transmission corridor. At this point, the line would transition from underground to overhead within the transmission corridor on the eastern side of Beaumont Avenue, Cherry Avenue or Highland Springs Avenue.

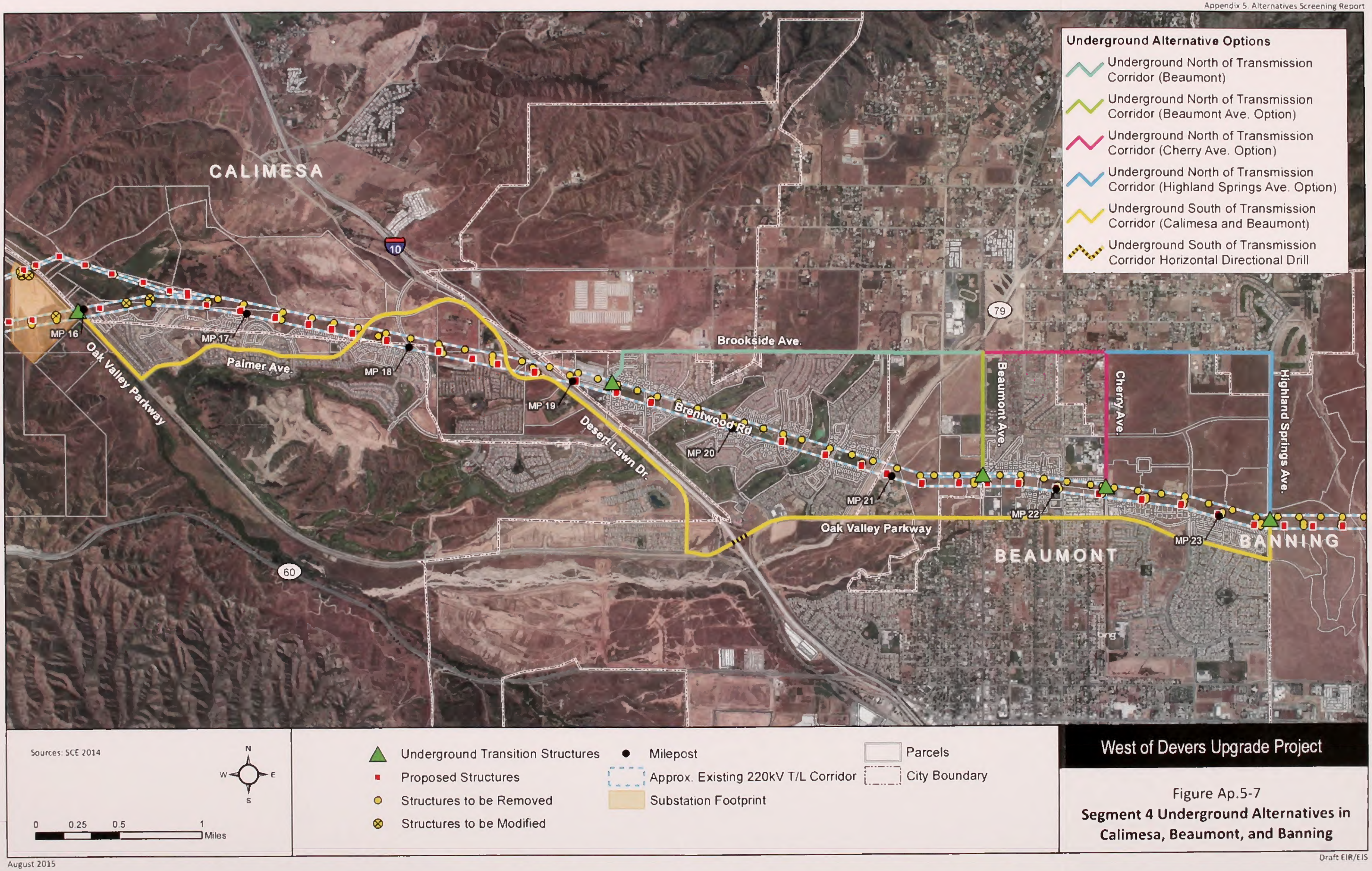

Underground Alternative Options
Underground North of Transmission Corridor (Beaumont)
Underground North of Transmission Corridor (Beaumont Ave. Option)
Underground North of Transmission Corridor (Cherry Ave. Option)
Underground North of Transmission Corridor (Highland Springs Ave. Option)
Underground South of Transmission Corridor (Calimesa and Beaumont)
Underground South of Transmission Corridor Horizontal Directional Drill
CALIMESA
BEAUMONT
BANNING
10
79
60
Brookside Ave.
Palmer Ave.
Oak Valley Parkway
Desert Lawn Dr.
Brentwood Rd
Beaumont Ave.
Cherry Ave.
Highland Springs Ave.
MP 16
MP 17
MP 18
MP 19
MP 20
MP 21
MP 22
MP 23
Sources: SCE 2014
N
S
E
W
0
0.25
0.5
1
Miles
Underground Transition Structures
Proposed Structures
Structures to be Removed
Structures to be Modified
Milepost
Approx. Existing 220kV T/L Corridor
Substation Footprint
Parcels
City Boundary
West of Devers Upgrade Project

Figure Ap.5-7
Segment 4 Underground Alternatives in Calimesa, Beaumont, and Banning

- **Underground South of Transmission Corridor (Calimesa and Beaumont).** The alternative route option would transition from overhead to underground near MP 16.0. It would travel southeast in Oak Valley Parkway, east in Palmer Drive and east then southeast in Desert Lawn Drive to Oak Valley Parkway. From Oak Valley Parkway, the lines would be horizontally directional drilled for 800 to 1,200 feet to cross under I-10 to the east. The route would continue for 3.3 miles in Oak Valley Parkway to Highland Springs Avenue. At Highland Springs Avenue the route would turn north for 0.2 miles until it would rejoin the proposed transmission corridor and would transition from underground to overhead just east of Highland Springs Road (MP 23.3).

Two separate alignments of concrete duct banks would need to be installed in continuous trenches at least 8 feet wide, and underground vaults would be required approximately every 1,500 feet, in order to place the four 220 kV circuits in Segment 4 underground.

Once the alternative is energized, SCE would remove the conductors from the existing overhead towers and may choose to remove the existing towers, but retain its ROW for future use, or have the towers remain in place for other uses within the ROW.

Consideration of CEQA/NEPA Criteria

Project Objectives, Purpose and Need

Basic Project Objective 1, Increase system deliverability: The Segment 4 Underground Alternative would meet this objective by providing the same transfer capability and deliverability as the Proposed Project. The resulting capacity of 4,800 MW would exceed the 2,200 MW of increased deliverability defined in this objective.

Basic Project Objective 2, Support renewable energy goals: This alternative would meet this objective by supporting renewable energy goals.

Basic Project Objective 3, Maximize remaining space in the corridor: This alternative would place a segment of the project underground, which would increase the space available in the ROW for other uses when compared with the Proposed Project. Also, depending on the route option being considered, the Segment 4 Underground Alternative may be installed in roadways and not within the existing ROW.

This alternative would meet most or all of the stated objectives and purpose and need of the Proposed Project.

Feasibility

Technical, Regulatory and Legal Feasibility. This alternative appears to be feasible considering technical, legal, and regulatory factors.

Construction Timeframe. The installation of underground transmission lines would require more time than construction of an equivalent length of overhead lines because of the time required for excavating the trench. However, given that the project would be constructed in segments and some of these alternative segments would be outside of the existing corridor, which must remain in service, construction of this alternative would not affect the overall schedule and online date of the Proposed Project.

Reliability. Maintenance and restoration time in the event of an outage would also be more difficult with an underground transmission line and could result in longer outages and repair times, but this alternative would comply with applicable Reliability Standards and Regional Business Practices developed by NERC, WECC, and CAISO. Furthermore, the alternative would be designed and constructed in conformance with SCE's approved engineering, design, and construction standards for substation, transmission, subtransmission, and distribution system projects. Therefore, the reliability of this alternative on SCE's transmission system would be similar to the Proposed Project.

Environmental Advantages

Visual Resources. This underground alternative would eliminate visual impacts associated with the new overhead 220 kV transmission route in Calimesa, Beaumont, and Banning.

Biological Resources. An underground transmission line located within a roadway would eliminate the permanent loss of habitat at each pole footings that would result from the construction of the overhead line. In addition, underground transmission lines would reduce the potential for bird electrocution.

Future Transmission Expansion. By moving the proposed 220 kV upgrades outside of SCE's existing transmission corridor, the available space in the ROW for future transmission expansion would be increased, which could reduce cumulative impacts from the construction of new line(s) in the future by allowing more siting flexibility within the ROW.

Environmental Disadvantages

Traffic and Transportation. The underground route may be located in roadways, which would result in temporary lane closures during construction, increasing the need for traffic control and possible roadway closures.

Land Use. The alternative route option in Brookside Avenue would cross behind residences and in front of Brookside Elementary School and Beaumont High School, which would increase construction disturbances and EMF-related concerns such as induced currents and shocks and radio/television/electrical equipment impacts on these sensitive receptors. Additionally, depending on the route option, Mountain View Middle School is located on Beaumont Avenue and San Gorgonio Middle School is located on Cherry Avenue in Beaumont.

Ground Disturbance and Hazards. Construction of this underground alternative would require substantially more construction activity and ground disturbance due to the continuous trenching that would be required. Construction of overhead 220 kV transmission lines results in construction disturbance primarily at individual structure sites along the alignment. Construction of underground lines requires continuous trenching that would result in much greater ground disturbance and construction-related impacts (traffic, air quality and dust, and noise). The underground segment in Brookside Avenue may introduce the hazard of trenching through a sub-surface natural methane area. There is also a greater potential to encounter contaminated soils and cultural resources.

Biological Resources. If an underground line is installed within the ROW, there would be a much greater level of ground disturbance and associated habitat disturbance from continuous trenching outside of a roadway.

Construction and Repair Time. The installation of an underground transmission line would require more time than construction of an equivalent length of overhead line because of the time required for excavating the trench. In addition, maintenance and restoration time in the event of an outage would also be more difficult and could result in longer outages and repair times. Accessing manholes and performing required repairs will require traffic control and possible lane or roadway closure.

Alternative Conclusions

Eliminated. This alternative would meet all three Basic Project Objectives and would be feasible considering technical, legal, and regulatory factors. Undergrounding the proposed 220 kV lines would reduce or avoid visual impacts, but it would result in much more severe construction impacts related to dust, ground disturbance, and traffic and would pass by two schools. Maintenance and repair times would also be increased. Furthermore, this segment of the ROW for the Proposed Project is 400 feet wide. Therefore, there is room within the ROW to modify structure locations to reduce impacts to residences, as has been considered under the Tower Relocation Alternative (see Section 4.2). Due to a greater level of environmental impacts and because another alternative, the Tower Relocation Alternative, has been identified to reduce significant visual impacts in these areas, the Segment 4 Underground Alternative has been eliminated from consideration in this EIR/EIS.

The Tower Relocation Alternative, which is discussed in Section 4.2 and retained for evaluation in this EIR/EIS, would meet all project objectives, would be feasible, and would reduce the significant visual impacts in this area without creating new impacts of its own.

5.4 Segment 5 Morongo Central Route Alternative (Original PEA Proposed Route)

This alternative segment was evaluated because it was the original route presented in SCE's PEA. The route segment across tribal land was eliminated because the Morongo Tribe indicated its preference for the Proposed Project route, so this segment would not be feasible.

Alternative Description

This alternative was proposed by SCE in its PEA (PEA Section 2.2.1.1; SCE, 2013). The Segment 5 Morongo Central Route Alternative would depart from the Proposed Project immediately west of the Morongo reservation at North Hathaway Street (MP 27.4). The alternative route would continue to the southeast on a diagonal route, south of the existing transmission corridor and approximately 500 to 1,500 feet north of the currently proposed route, for approximately 3 miles. It would rejoin the Proposed Project west of Malki Road on the Morongo reservation land (see Figure Ap.5-8). The alternative route would be approximately 0.13 miles shorter than the Proposed Project.

Consideration of CEQA/NEPA Criteria

Project Objectives, Purpose and Need

Basic Project Objective 1, Increase system deliverability: This alternative would meet this objective by providing the same transfer capability and deliverability as the Proposed Project. The resulting capacity of 4,800 MW would exceed the 2,200 MW of increased deliverability defined in this objective.

Basic Project Objective 2, Support renewable energy goals: This alternative would support renewable energy goals by allowing a substantial increase in import capacity.

Basic Project Objective 3, Maximize remaining space in the corridor: This alternative would result in the same amount of space being available in the ROW as with the Proposed Project.

The Segment 5 Morongo Central Route Alternative would allow SCE to fully deliver the output of new generation projects, would facilitate progress toward achieving California's RPS goals, and would comply with reliability standards. Although, the alternative would not be located within the existing ROW, this portion of the Proposed Project is also proposed for relocation under the ROW Agreement with the Morongo Tribe. Therefore, this alternative would meet all three Basic Project Objectives.

Feasibility

Technical Feasibility. This alternative is technically feasible.

Regulatory Feasibility. Because this route would be near the Banning Municipal Airport, SCE coordinated with the FAA to determine the feasibility of this alternative. The FAA stated the route is feasible with installation of hazard marker balls and lighting (SCE, 2013).

Legal Feasibility. This alternative could proceed only if it were recommended and approved by the Morongo Band of Mission Indians. A new ROW Agreement would need to be signed by SCE and the Morongo in order for it to move forward. In response to a CPUC Data Request No. 1 (dated May 2014), the Morongo Tribe stated that "[t]he General Membership of the Morongo Band has approved SCE's proposed route through the Morongo reservation. That is the only route through the Morongo reservation that is available to SCE, unless the Morongo Band's General Membership were to approve a different route. Therefore, no other routes through the Morongo reservation need to be evaluated" (Morongo, 2014). As a result, this alternative is considered to be legally infeasible.

Construction Timeframe. The Morongo Band's General Membership would need to vote and approve this alternative route, which could result in project delays. Although the project would be constructed in the non-tribal segments while awaiting a revised Agreement, given the length of time it took for SCE and the tribe to agree on in the terms of the ROW Agreement (see EIR/EIS Appendix 3), project delays are considered to be likely under this alternative.

Reliability. This alternative would comply with applicable Reliability Standards and Regional Business Practices developed by NERC, WECC, and CAISO. Furthermore, the alternative would be designed and constructed in conformance with SCE's approved engineering, design, and construction standards for substation, transmission, subtransmission, and distribution system projects. Therefore, the reliability of this alternative on SCE's transmission system would be similar to the Proposed Project.

Environmental Advantages

Transportation and Traffic. The nearest runway at Banning Municipal Airport is approximately 4,530 feet from this alternative route, compared to 3,750 feet from the Proposed Project ROW. This alternative would be farther from the Banning Airport, which would reduce potential navigational and air safety impacts.

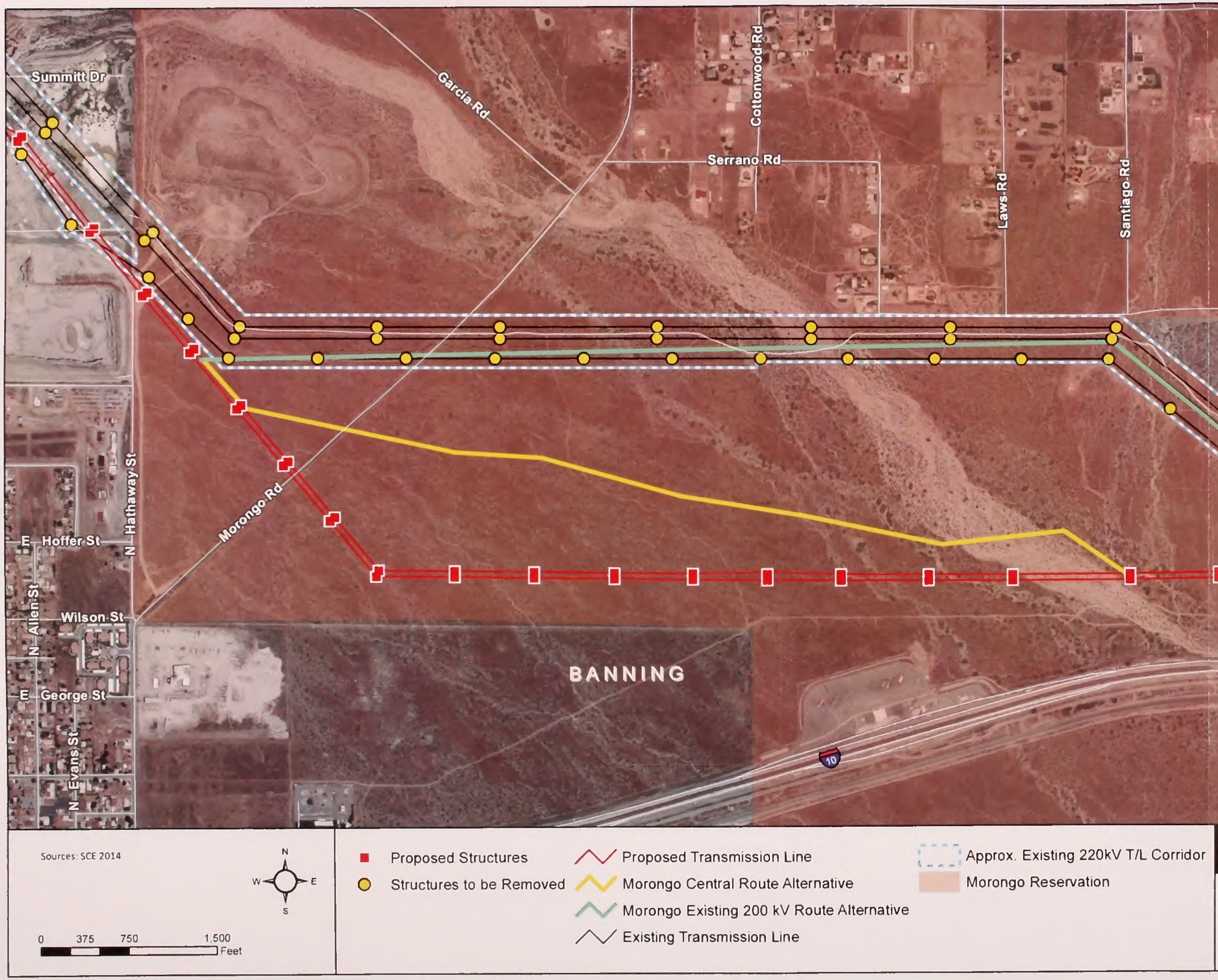
Visual Resources. This alternative would be farther from the Banning Airport, and therefore may have fewer FAA requirements for tower lighting, which would reduce operational visual resources impacts of the Proposed Project.

Ground Disturbance. Construction of this alternative would be 0.13 miles shorter, which would require slightly less construction activity and ground disturbance, decreasing impacts in air quality, noise, transportation and traffic, hazardous materials related to environmental contamination, and geologic resources related to soil erosion. The potential to disturb unknown cultural resources and impact vegetation and wildlife is also decreased with less ground disturbance. Decreased disturbance and removal of vegetation would decrease the chance of noxious weed introduction as well as the removal of more native vegetation.

Environmental Disadvantages

Visual Resources. This alternative would increase operational visual impacts, as well as temporary visual impacts associated with construction, by siting the towers closer to residences on the Morongo reservation.

Land Use and Construction-Related Disturbance. Siting towers closer to residences would increase construction-related disturbance impacts associated with noise and dust to sensitive receptors.



West of Devers Upgrade Project

Figure Ap.5-8

Morongo Alternatives

Alternative Conclusions

Eliminated. This alternative would meet all three Basic Project Objectives and would be feasible considering technical and regulatory factors. However, given the stated preference and approval by the Morongo Tribe for the proposed southern route and that approval of this alternative by the Morongo Tribe would be required, this alternative appears to be infeasible and it has been eliminated from consideration in this EIR/EIS.

5.5 Segment 5 Morongo Existing 220 kV Route Alternative (Existing ROW)

This alternative segment was evaluated because it is the existing ROW across the westernmost portion of Morongo tribal land. It was eliminated because the Morongo Tribe indicated its preference for the Proposed Project route, so this segment would not be feasible.

Alternative Description

Under this alternative, SCE's proposed 220 kV transmission upgrades would occur within the existing SCE ROW and the 3 miles of new structures would not be relocated on the Morongo reservation. The Segment 5 Morongo Existing 220 kV Route Alternative would depart from the Proposed Project immediately west of the Morongo reservation at North Hathaway Street (MP 27.4). The alternative route would continue to the southeast then east for 1.6 miles before turning southeast on a diagonal to rejoin the Proposed Project west of Malki Road on the Morongo reservation land (see Figure Ap.5-8). The alternative route would be approximately the same length as the Proposed Project.

Consideration of CEQA/NEPA Criteria

Project Objectives, Purpose and Need

Basic Project Objective 1, Increase system deliverability: This alternative would meet this objective by providing the same transfer capability and deliverability as the Proposed Project. The resulting capacity of 4,800 MW would exceed the 2,200 MW of increased deliverability defined in this objective.

Basic Project Objective 2, Support renewable energy goals: This alternative would support renewable energy goals by allowing a substantial increase in import capacity.

Basic Project Objective 3, Maximize remaining space in the corridor: This alternative would result in the same amount of space being available in the ROW as with the Proposed Project.

The Segment 5 Morongo Existing 220 kV Route Alternative would allow SCE to fully deliver the output of new generation projects, would facilitate progress toward achieving California's RPS goals, and would comply with reliability standards. Furthermore, the Segment 5 Morongo Existing 220 kV Route Alternative would be located within and would maximize the use of SCE's existing transmission ROW. Therefore, this alternative would meet all of the Basic Project Objectives and purpose and need of the Proposed Project.

Feasibility

Technical and Regulatory Feasibility. This alternative appears to be feasible considering technical and regulatory factors.

Legal Feasibility. This alternative would proceed only if it were recommended and approved by the Morongo Band of Mission Indians. A new ROW Agreement would need to be approved in order for it to move forward. In response to a CPUC Data Request No. 1 (dated May 2014), the Morongo Tribe stated that "[t]he General Membership of the Morongo Band has approved SCE's proposed route through the Morongo reservation. That is the only route through the Morongo reservation that is available to SCE, unless the Morongo Band's General Membership were to approve a different route. Therefore, no other routes through the Morongo reservation need to be evaluated" (Morongo, 2014). As a result, this alternative is considered to be legally infeasible.

Construction Timeframe. The Morongo Band's General Membership would need to vote and approve this alternative route, which would most likely result in project delays. Although the project could still be constructed in non-tribal segments while awaiting a Morongo decision, given the length of time it took for SCE and the Morongo to come to agreement on ROW terms (see EIR/EIS Appendix 3), project delays are considered to be likely under this alternative.

Reliability. This alternative would comply with applicable Reliability Standards and Regional Business Practices developed by NERC, WECC, and CAISO. Furthermore, the alternative would be designed and constructed in conformance with SCE's approved engineering, design, and construction standards for substation, transmission, subtransmission, and distribution system projects. Therefore, the reliability of this alternative on SCE's transmission system would be similar to the Proposed Project.

Environmental Advantages

Transportation and Traffic. The nearest runway at Banning Municipal Airport is approximately 6,000 feet from this alternative route in the existing ROW, compared to 3,750 feet from the Proposed Project ROW. This alternative would be farther from the Banning Airport and within an existing known corridor, which would reduce potential navigational and air safety impacts.

Visual Resources. This alternative would be farther from the Banning Airport, and therefore may have fewer FAA requirements for marker balls and tower lighting, which would reduce operational visual resources impacts of the Proposed Project.

Ground Disturbance. This alternative would utilize an existing corridor, which has been previously disturbed and has access and spur roads in place.

Environmental Disadvantages

Visual Resources. This alternative would increase operational visual impacts as well as temporary visual impacts associated with construction by siting the upgraded towers closer to residences on the Morongo reservation.

Land Use and Construction-Related Disturbance. Siting towers closer to residences would increase construction-related disturbance impacts associated with noise and dust to sensitive receptors.

Alternative Conclusions

Eliminated. This alternative would meet all three Basic Project Objectives and would be feasible considering technical and regulatory factors. However, given the stated preference and approval by the Morongo Tribe for the proposed southern route, this alternative not considered to be legally feasible. As a result, it has been eliminated from consideration in this EIR/EIS.

5.6 East Banning–Morongo Alternative

This alternative segment was developed by the EIR/EIS Team to reduce significant visual impacts to residences in Banning. It was eliminated because the Morongo Tribe indicated its preference for the Proposed Project route, so this segment would not be feasible.

Alternative Description

The EIR/EIS Team defined significant visual impacts that would result from installation of the new tubular steel poles (TSPs) due to their visibility from residences on North Hathaway Street and North Evans Street in the City of Banning. The existing lattice towers are located 2,500 feet away from these residences. The proposed towers would be 1,700 feet away and would be TSPs at the Tribe's request, which have greater bulk, so would be much more visible.

As shown in Figure Ap.5-9, this 0.6-mile alternative would replace 0.7 miles of the proposed route and would involve moving the TSPs farther from residences. The alternative would begin at approximately Milepost 28.8 where the route would diverge from the Proposed Project by continuing in a southeast direction to the east and north of the proposed route. The alternative would continue in a straight line rejoin the Proposed Project at MP 29.5 after the proposed route would turn from southeast to east on Morongo land.

Consideration of CEQA/NEPA Criteria

Project Objectives, Purpose and Need

Basic Project Objective 1, Increase system deliverability: This alternative would meet this objective by providing the same transfer capability and deliverability as the Proposed Project. The resulting capacity of 4,800 MW would exceed the 2,200 MW of increased deliverability defined in this objective.

Basic Project Objective 2, Support renewable energy goals: This alternative would support renewable energy goals by allowing a substantial increase in import capacity.

Basic Project Objective 3, Maximize remaining space in the corridor: This alternative would not affect the amount of space available in the ROW that would be available with the Proposed Project.

The East Banning–Morongo Alternative would allow SCE to fully deliver the output of new generation projects, would facilitate progress toward achieving California's RPS goals, and would comply with reliability standards. This portion of the Proposed Project is proposed for relocation under the ROW Agreement[4] with the Morongo Tribe. Therefore, this alternative would meet all three of the Basic Project Objectives and purpose and need of the Proposed Project.

Feasibility

Technical Feasibility. This alternative appears to be feasible considering technical and regulatory factors.

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[4] Under the Agreement Related to Grant Easements and Rights-of-Way for Electric Transmission Lines and Appurtenant Fiber-Optic Telecommunications Lines and Access Roads On and Across Lands of the Morongo Indian Reservation (the "ROW Agreement") entered into November 27, 2012, by and between the Morongo Band of Mission Indians ("Morongo") and SCE, Morongo consented to the grants to SCE by the United States of America ("federal grants") of certain easements and rights of way on and across the lands of the Morongo Indian Reservation. Pursuant to the Agreement, Morongo consented to the federal grants to SCE of the rights of way and easements necessary for SCE to continue operating its existing 220 kV facilities on the Morongo Reservation and to replace and upgrade those facilities with the WOD Project for 50 years.

Legal Feasibility. This alternative is located on the Morongo Band of Mission Indians' tribal land, and a relocated transmission line would require Morongo Tribe approval. The Morongo Tribe stated the following in response to CPUC Data Request No. 2 (dated September 23, 2014), "the General Membership of the Morongo Band approved Southern California Edison's (SCE's) proposed route through the Morongo reservation as the only route through the Morongo reservation that is available to SCE, unless the Morongo Band's General Membership were to approved a different route, and thus, any alternative route would not be legally feasible and need not be considered" (Morongo, 2014).

Construction Timeframe. The Morongo Band's General Membership would need to vote and approve this alternative route, which would most likely result in project delays. Although the project would be constructed in segments and SCE could proceed with construction of other portions of the project while awaiting a Morongo decision, given the length of time it took for SCE to reach agreement with the tribe in the ROW Agreement with SCE (see EIR/EIS Appendix 3), project delays are likely under this alternative.

Reliability. This alternative would comply with applicable Reliability Standards and Regional Business Practices developed by NERC, WECC, and CAISO. Furthermore, the alternative would be designed and constructed in conformance with SCE's approved engineering, design, and construction standards for substation, transmission, subtransmission, and distribution system projects. Therefore, the reliability of this alternative on SCE's transmission system would be similar to the Proposed Project.

Environmental Advantages

Visual Resources. Moving the 220 kV structures farther from residences in eastern Banning would reduce significant visual impacts from residences in eastern Banning when viewing of new TSPs on Morongo land.

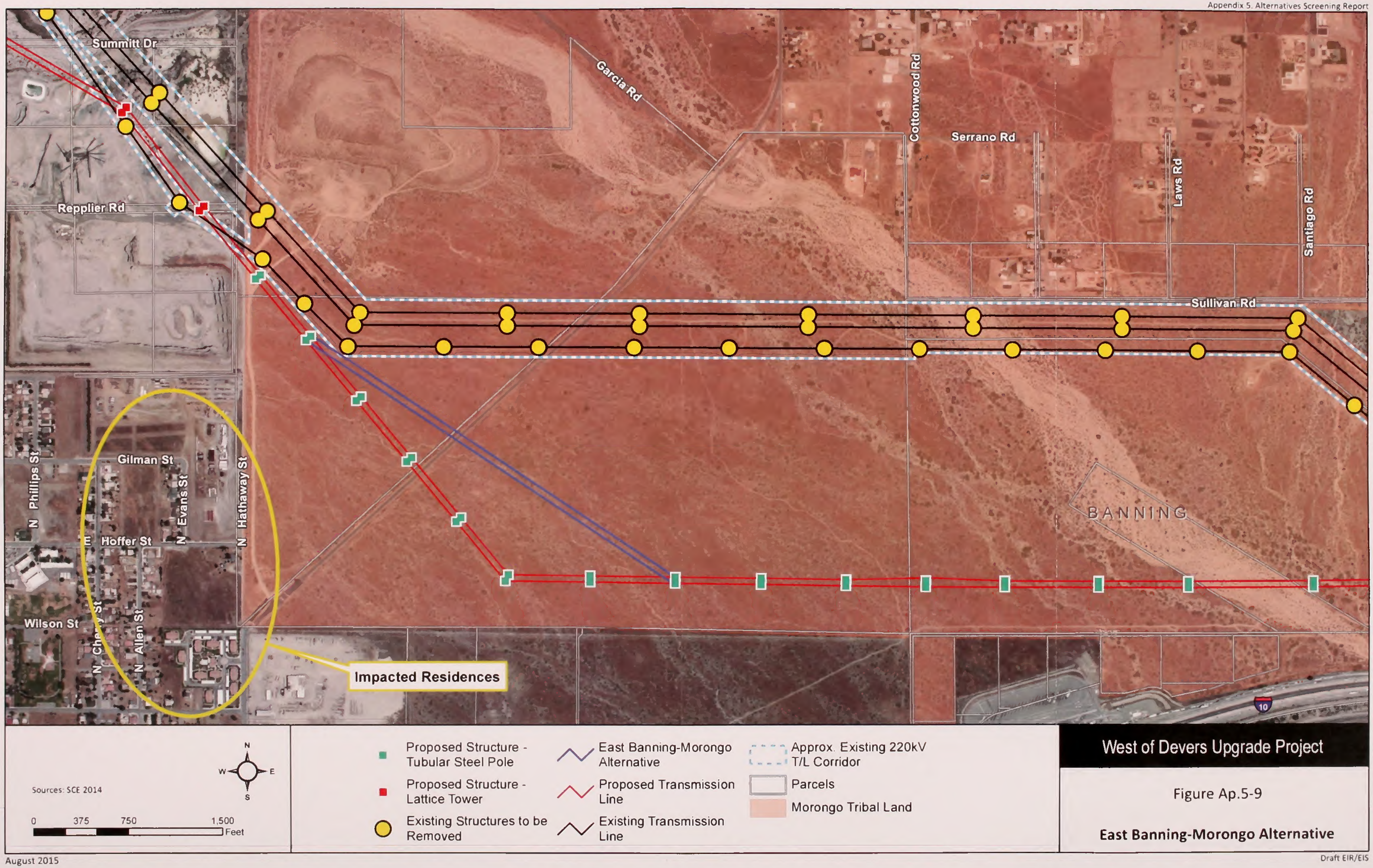
Ground Disturbance. Construction of this alternative would be 0.1 miles shorter, which would require slightly less construction activity and ground disturbance, decreasing impacts in air quality, noise, transportation and traffic, hazardous materials related to environmental contamination, and geologic resources related to soil erosion. The potential to disturb unknown cultural resources and impact vegetation and wildlife is also decreased with less ground disturbance. Decreased disturbance and removal of vegetation would decrease the chance of noxious weed introduction as well as the removal of more native vegetation.

Environmental Disadvantages

No environmental disadvantages compared to the proposed route have been identified for this alternative.

Alternative Conclusion

Eliminated. This alternative would meet all of the Basic Project Objectives and would be feasible considering technical and regulatory factors. However, given the stated preference and approval by the Morongo Tribe for the proposed route and that approval of this alternative by the Morongo Tribe would be required, the East Banning–Morongo Alternative is highly unlikely to be legally feasible. As a result, it has been eliminated from consideration in this EIR/EIS.



Sources: SCE 2014

West of Devers Upgrade Project

Figure Ap.5-9

East Banning-Morongo Alternative

5.7 Devers-Beaumont 500 kV Alternative (SCE System Alternative 1)

This alternative was evaluated because SCE presented it as a potential alternative in its PEA. It has been eliminated because it would have substantially more severe environmental impacts than the Proposed Project. Note that this alternative is described in Section C.6.3.1 as the No Project/No Action Alternative, Option 1 because it is one of the likely actions that SCE would take if the Proposed Project were not approved. Impacts of the No Project/No Action Alternative are analyzed in Section D.

Alternative Description

This alternative was proposed by SCE in its PEA as System Alternative 1, New 500/220 kV Substation and New 500 and 220 kV Transmission Lines (PEA Section 2.1.2.2; SCE, 2013). This alternative would include removal of approximately 30 miles of existing 220 kV lines and structures in the WOD corridor between Devers and El Casco Substations, which would eliminate impacts of the existing transmission lines and the Proposed Project to the Morongo Tribe, and the cities and communities from Beaumont to the eastern end of the project. SCE states that this alternative transmission system upgrade, involving a new Devers-to-Beaumont 500 kV system, is the most likely option that would be proposed by SCE if the proposed WOD Upgrade Project does not occur (SCE, 2014; Response to ALT-6), as described in EIR/EIS Section C.6.3, No Project/No Action Alternative Scenario.

The Devers-Beaumont 500 kV Alternative would require construction of a new 500/220 kV substation near the City of Beaumont, a new 500 kV transmission line in new and existing ROW between Devers Substation and the new 500/220 kV substation, four new 220 kV transmission lines in a new ROW between the new 500/220 kV substation to the existing WOD corridor, and upgrades to the existing WOD 220 kV transmission lines and associated existing substations between El Casco, San Bernardino, and Vista Substations (see Figure Ap.5-10). The Devers-Beaumont 500 kV Alternative would also require acquisition of property to construct the new 500/220 kV substation near the City of Beaumont.

According to SCE, the Devers-Beaumont 500 kV Alternative would include the following components:

- Acquire approximately 23.5 miles of ROW for the new 500 kV transmission lines, approximately 7 miles of ROW for the new 220 kV transmission lines, and property rights for a new 500/220 kV substation near the City of Beaumont.
- Construct a new 500/220 kV substation near the City of Beaumont.
- Construct approximately 23.5 miles of new 500 kV single-circuit transmission line in new ROW, and approximately 5 miles of new 500 kV double-circuit transmission lines in existing ROW, between Devers Substation and the new 500/220 kV Beaumont Substation.
- Construct four new 220 kV transmission lines using double-circuit transmission towers in approximately 7 miles of new ROW between the new 500/220 kV Beaumont Substation and the existing WOD corridor near the El Casco Substation.
- Loop-in one of the existing Devers-Valley 500 kV transmission lines into the new 500/220 kV substation.
- Tear down and rebuild approximately 15 miles of existing 220 kV transmission lines and structures within the existing WOD corridor between the existing El Casco and Vista Substations.
- Tear down and rebuild approximately 13 miles of existing 220 kV transmission lines and structures within the existing WOD corridor between the existing El Casco and San Bernardino Substations.

- Tear down and rebuild approximately 3.5 miles of existing 220 kV transmission lines and structures within the existing WOD corridor between San Bernardino Substation and the San Bernardino Junction.
- Remove approximately 30 miles of existing 220 kV transmission lines and structures within the existing WOD corridor between El Casco and Devers Substations.
- Remove and relocate approximately 11 miles of existing 115 kV subtransmission lines.
- Install telecommunication lines and equipment for protection, monitoring, and control of transmission and substation facilities.
- Upgrade utility equipment within Devers, El Casco, San Bernardino, Vista, Timoteo, Etiwanda, and Tennessee Substations.
- Remove and relocate approximately 2 miles of existing 66 kV subtransmission lines.
- Remove and relocate approximately 4 miles of existing 12 kV distribution lines.

Consideration of CEQA/NEPA Criteria

Project Objectives, Purpose and Need

Basic Project Objective 1, Increase system deliverability: This alternative would provide a similar increase in system deliverability as the Proposed Project. Therefore, this alternative would exceed the 2,200 MW of increased deliverability defined in this objective.

Basic Project Objective 2, Support renewable energy goals: This alternative would support renewable energy goals in the same manner as would the Proposed Project.

Basic Project Objective 3, Maximize remaining space in the corridor: The Devers-Beaumont 500 kV Alternative would relocate the new transmission facilities to a different ROW. The removal of existing 220 kV transmission structures from the existing WOD corridor would increase the space available in the WOD ROW for other uses.

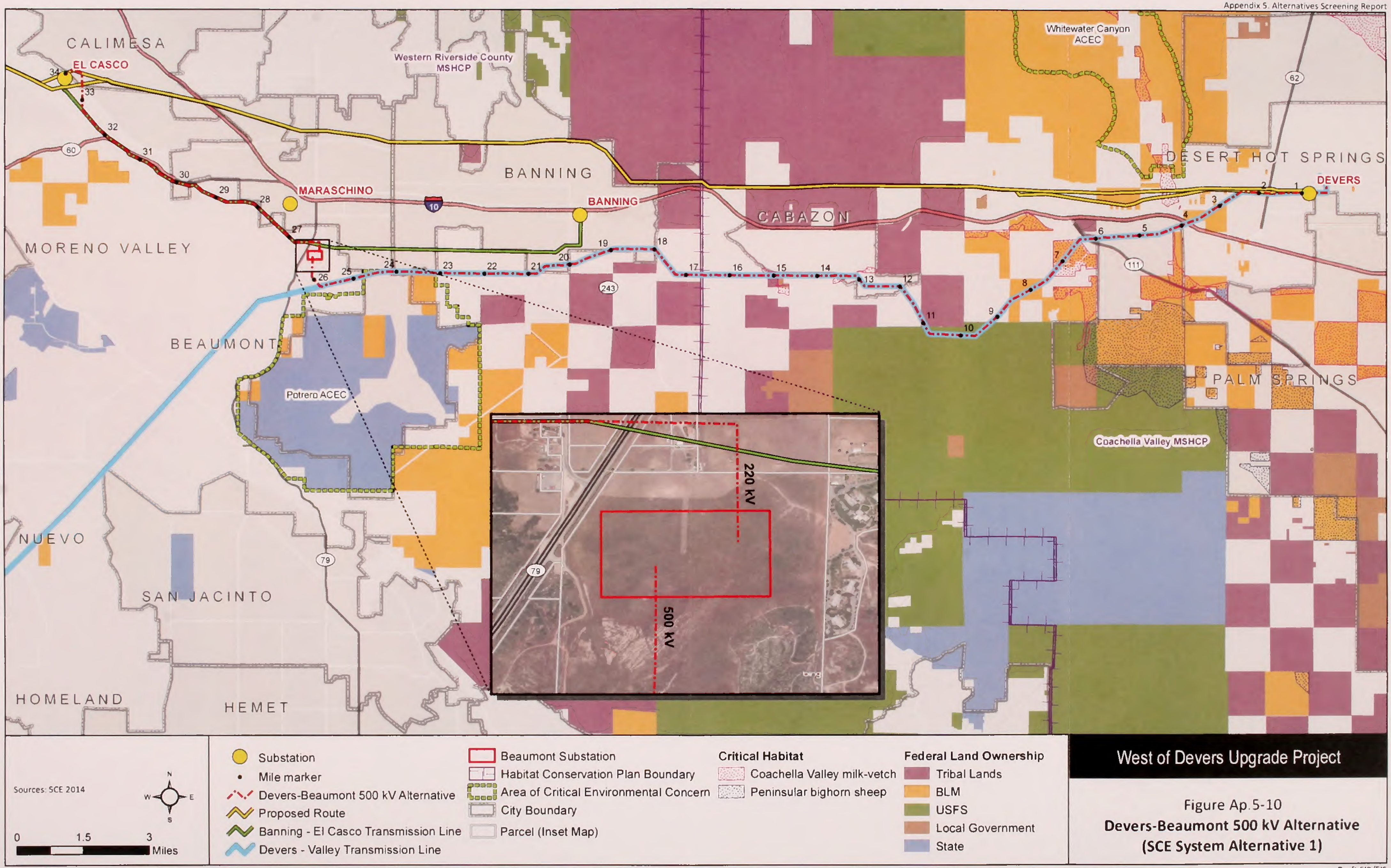
This alternative would allow SCE to fully deliver the output of new generation projects, would facilitate progress toward achieving California's RPS goals, and would comply with reliability standards. Therefore, this alternative would meet all of the Basic Project Objectives and purpose and need of the Proposed Project.

Feasibility

Technical Feasibility. The Devers-Beaumont 500 kV Alternative would require construction within the Devers-Valley and El Casco System ROWs. The Devers-Valley ROW includes extremely steep slopes with only helicopter access. However, given that the Devers-Valley No. 2 line was recently constructed in that corridor, this additional circuit is considered to be technical feasible to construct.

Regulatory Feasibility. Constructing a new 500 kV line from Devers to a new Beaumont Substation would require a route that would affect both the San Bernardino Forest's San Jacinto Wilderness and the BLM's Potrero ACEC.

- *Potrero Area of Critical Environmental Concern (ACEC) – BLM Land and Resource Management Plan Amendment.* The Potrero ACEC is a 1,030-acre area under the jurisdiction of the BLM. At least five species of wildlife that are listed as threatened or endangered may occur within the Potrero ACEC, including the least Bell's vireo (*Vireo bellii pusillus*), southwestern willow flycatcher (*Empidonax traillii extimus*), coastal California gnatcatcher (*Polioptila californica californica*), Stephens' kangaroo rat (*Dipodomys stephensi*), and arroyo toad (*Bufo californicus*).



West of Devers Upgrade Project

Figure Ap.5-10
Devers-Beaumont 500 kV Alternative (SCE System Alternative 1)

A Plan Amendment may be required for the proposed transmission line across BLM lands, if the route is located outside of the designated utility corridor and within the ACEC. The requirement for a plan amendment may not make the alternative infeasible, but it would require a series of additional regulatory requirements: (a) NEPA clearance of the plan amendment would be required; (b) public noticing would be required by filing in the Federal Register; (c) an extension of the Draft EIR/EIS public review period to 90 days; and (d) a 60-day Governor's Consistency Review following the publishing of the Final EIR/EIS. The Final EIR/EIS would also have to identify in its title that the EIR/EIS also evaluates a proposed Plan Amendment. It is not known at this time whether BLM would approve the required plan amendment; therefore, regulatory feasibility is not certain.

- *San Bernardino National Forest – San Jacinto Wilderness.* With the San Jacinto Wilderness, the new line would have to be constructed within the Congressionally designated transmission corridor, where the Devers-Valley No. 1 and No. 2 lines are currently located.

Legal Feasibility. While this route would face regulatory challenges due to the protective land uses along the potential route, it appears that use of the existing Devers-Valley ROW through protected lands would be feasible as long as the new 500 kV circuit remains within the Congressionally approved ROW.

Construction Timeframe. The regulatory and construction challenges discussed above may cause delays to the in-service date.

Reliability. This alternative would comply with applicable Reliability Standards and Regional Business Practices developed by NERC, WECC, and CAISO. Furthermore, the alternative would be designed and constructed in conformance with SCE's approved engineering, design, and construction standards for substation, transmission, subtransmission, and distribution system projects. Therefore, the reliability of this alternative on SCE's transmission system would be similar to the Proposed Project.

Environmental Advantages

This alternative would remove approximately 30 miles of existing 220 kV transmission lines and structures within the existing WOD corridor between El Casco and Devers Substations, which would eliminate impacts of the existing transmission lines. In addition, the impacts of the Proposed Project would not occur on the Morongo Tribal land and from Banning and Beaumont to the eastern end of the project area. However, impacts of the Proposed Project would be transferred to different locations, where the impacts would likely be more severe.

Environmental Disadvantages

Biological Resources. The areas around the San Jacinto Wilderness and Potrero ACEC have greater potential for impacts to sensitive habitats and species than construction of the Proposed Project within an existing transmission corridor.

Recreation and Wilderness. The alternative would traverse the San Jacinto–Santa Rosa National Monument, the San Jacinto Wilderness, and the Potrero ACEC, although in an existing transmission corridor.

Land Use. Construction of a new transmission corridor and substation through the populated areas of Cabazon, Banning, and Beaumont (along the existing Devers-Valley corridor) would create construction disturbance and severe visual impacts to residences and sensitive receptors.

Visual Resources. Construction of a new 500 kV line with taller double-circuit towers, as well as construction of a new 500 kV/220 kV substation near the City of Beaumont, would likely create more severe significant and unmitigable visual resources impacts.

Alternative Conclusions

Eliminated. This alternative would meet all three Basic Project Objectives and has the potential to be technically and legally feasible. Construction of a new corridor and 500 kV/220 kV substation in the sensitive environment of the San Jacinto-Santa Rosa National Monument and the San Bernardino National Forest, as well as through the developed areas of Banning and Beaumont would create construction disturbance and greater visual impacts to residences and sensitive receptors in these areas without providing any environmental advantages over the Proposed Project. Therefore, this alternative was eliminated from full consideration in this EIR/EIS.

5.8 Red Bluff–Valley-Serrano 500 kV Alternative (SCE System Alternative 2)

This alternative considered because it was presented as a potential alternative in SCE's PEA. It was eliminated because it would have substantially more severe environmental impacts than the Proposed Project, and may be infeasible to permit given the federal and tribal jurisdictions it would likely have to cross. Note that one segment of this alternative, the addition of a second 500 kV circuit from SCE's Valley Substation to its Serrano Substation, is considered as a component of the No Project/No Action Alternative, Option 2. This alternative is described in Section C.6.3.2, and impacts analyzed in Section D.

Alternative Description

This alternative was proposed by SCE in its PEA as System Alternative 2, New 500 kV Transmission Line (PEA Section 2.1.2.3; SCE, 2013) and is shown in Figure Ap.5-11. Under the Red Bluff–Valley-Serrano 500 kV Alternative, a new 500 kV transmission line would be constructed on new ROW between the existing Red Bluff, Valley, and Serrano Substations. The alternative would also require reconfiguration of the existing 220 kV circuits between El Casco, Vista, and San Bernardino Substations. Finally, the Red Bluff–Valley-Serrano 500 kV Alternative would require construction of 220 kV transmission line between Mira Loma and Vista Substations, and would require upgrades to Serrano Substation to increase the substation transfer capability. Specifically, this system alternative would include the following components:

- Acquire approximately 162 miles of ROW for a new 500 kV single-circuit transmission line.
- Acquire approximately 16 miles of ROW for a new 220 kV single-circuit transmission line.
- Construct approximately 120 miles of single-circuit 500 kV transmission line in a new ROW between Red Bluff and Valley Substations.
- Construct approximately 42 miles of single-circuit 500 kV transmission line in a new ROW between Valley and Serrano Substations.
- Construct approximately 16 miles of single-circuit 220 kV transmission line in a new ROW between Mira Loma and Vista Substations.
- Reconfigure the existing 220 kV system between El Casco, Vista, and San Bernardino Substations to form the following lines:
  - El Casco–Vista 220 kV transmission line
  - San Bernardino–Vista No. 2 220 kV transmission line
- Remove approximately 30 miles of existing 220 kV transmission lines and structures within the existing WOD corridor between El Casco and Devers Substations.
- Remove and relocate approximately 2 miles of existing 66 kV subtransmission lines.
- Remove and relocate approximately 4 miles of existing 12 kV distribution lines.

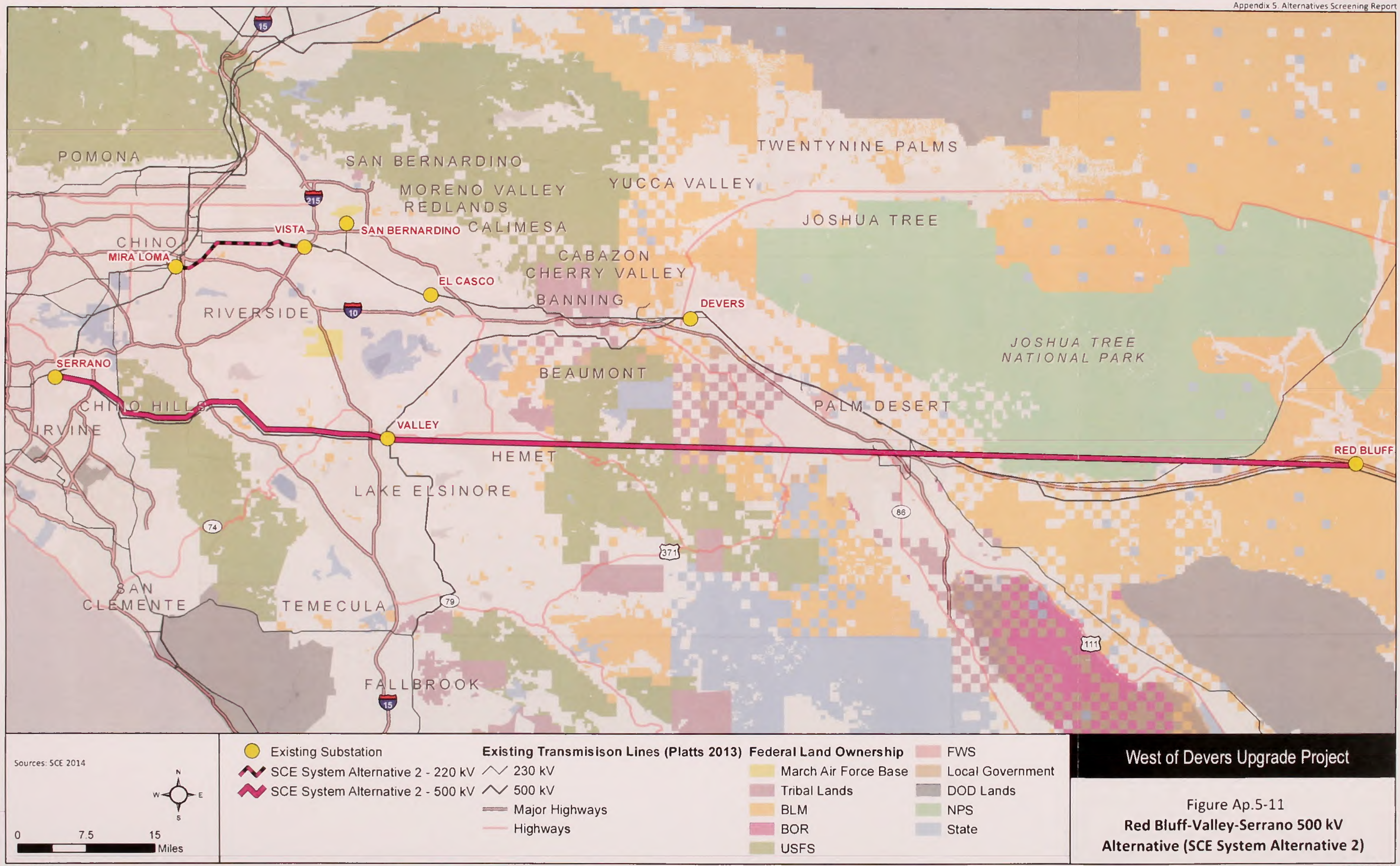


Figure Ap.5-11
Red Bluff-Valley-Serrano 500 kV Alternative (SCE System Alternative 2)

- Install telecommunication lines and equipment for protection, monitoring, and control of transmission and substation facilities.
- Upgrade utility equipment within Devers, El Casco, San Bernardino, Valley, and Vista Substations.
- Install a new 500/220 kV transformer bank at Serrano Substation and modify the 220 kV switchyard configuration.

Consideration of CEQA/NEPA Criteria

Project Objectives, Purpose and Need

Basic Project Objective 1, Increase system deliverability: This alternative would provide a similar increase in system deliverability as the Proposed Project. Therefore, this alternative would exceed the 2,200 MW of increased deliverability defined in this objective.

Basic Project Objective 2, Support renewable energy goals: This alternative would support renewable energy goals in the same manner as would the Proposed Project.

Basic Project Objective 3, Maximize remaining space in the corridor: The Red Bluff–Valley-Serrano 500 kV Alternative would establish miles of new ROW and would also follow existing established ROWs. This configuration would increase the space available in the WOD ROW for other uses when compared with the Proposed Project.

As discussed above, the majority the Red Bluff–Valley-Serrano 500 kV Alternative would establish a new ROW, when SCE's existing ROW could be rebuilt. Therefore, it would not follow the Garamendi Principles for prudent transmission planning to maximize the use of existing transmission line ROWs to the maximum extent practicable. Approximately 42 miles of the route would be the addition of a second 500 kV circuit between the Valley and Serrano Substations, passing through about 8 miles of the Cleveland National Forest (in an energy corridor designated by the Energy Policy Act's Westwide Corridors program). However, the alternative would allow SCE to fully deliver the output of new generation projects, would facilitate progress toward achieving California's RPS goals, and would comply with reliability standards. Therefore, this alternative would all of the Basic Project Objectives and purpose and need of the Proposed Project.

Feasibility

Technical Feasibility. The specific route of the Red Bluff–Valley-Serrano 500 kV Alternative between Red Bluff and Valley Substations has not been defined, and would have to cross the San Jacinto Mountains. Construction over rugged mountains is generally feasible, so this route could likely be constructed.

Regulatory Feasibility. SCE's map of this alternative implies that the Devers-Valley corridor would not be used and that this potential route would cross the Santa Rosa/San Jacinto Mountains south of Mount San Jacinto. As a result, it would face a large number of permitting challenges that would likely make it infeasible. As illustrated on Figure Ap.5-11, the route would likely pass through Congressionally designated wilderness areas (within the San Bernardino National Forest and on BLM land) and tribal land. In addition, the illustrated route would pass through the urban areas of the Cities of Palm Springs and Palm Desert. As a result, this alternative would face extensive regulatory and legal infeasibilities and strong public opposition.

Construction Timeframe. The regulatory challenges discussed above may make this alternative impossible to permit, but if a legal route were found, the permitting process would most likely cause extensive delays to the in-service date.

Reliability. This alternative would create a new, separate transmission corridor and would comply with applicable Reliability Standards and Regional Business Practices developed by NERC, WECC, and CAISO. Furthermore, the alternative would be designed and constructed in conformance with SCE's approved engineering, design, and construction standards for substation, transmission, subtransmission, and distribution system projects. Therefore, the reliability of this alternative on SCE's transmission system would be similar to the Proposed Project.

Environmental Advantages

Although all impacts within the existing WOD corridor would be eliminated, no environmental advantages compared to the proposed route have been identified for this alternative since similar types of impacts would be transferred to a different, new location with generally much higher resource values.

Environmental Disadvantages

Biological Resources. The areas around the San Jacinto Wilderness and Potrero ACEC have the greater potential for impacts to sensitive habitats and species than construction of the Proposed Project, which would be located within an existing, already-disturbed transmission corridor.

Recreation and Wilderness. The alternative would most likely traverse the Forest and BLM wilderness areas and tribal lands in Riverside County.

Land Use. Construction of a new and much longer transmission corridor through the populated areas of the Inland Empire would likely create greater construction disturbance impacts to residences and sensitive receptors.

Visual Resources. Construction of a new 500 kV line with taller towers in a new, longer corridor through sensitive land uses and protected federal and tribal lands would likely create greater significant and unmitigable visual resources impacts.

Ground Disturbance. This route would be much longer than the proposed route and would include construction of new 500 kV and 220 kV lines within new corridors, which will affect the length and intensity of short-term construction impacts and ground disturbance, increasing impacts in air quality, noise, transportation and traffic, hazardous materials related to environmental contamination, and geologic resources related to soil erosion. The potential to disturb unknown cultural resources and impact vegetation and wildlife is also increased with more ground disturbance. Increased disturbance and removal of vegetation could increase the chance of noxious weed introduction as well as the removal of more native vegetation.

Alternative Conclusions

Eliminated. This alternative would meet all three Basic Project Objectives and has the potential to be technically feasible. If the route were proposed through the wilderness areas and tribal lands (which would be very difficult to avoid based on SCE's schematic map), the regulatory and legal feasibility of this alternative would be highly questionable. In addition, construction of new, much longer corridors especially in the developed areas of the Inland Empire would create greater construction disturbance and visual impacts to residences and sensitive receptors in these areas without providing any environmental advantages over the Proposed Project. Therefore, this alternative was eliminated from full consideration in this EIR/EIS.

5.9 Reduced Build Alternative Option 1

This alternative was developed to consider the feasibility of the West of Devers project as proposed in 2005. The alternative would reduce the impacts of the Proposed Project by retaining the existing double-circuit towers rather than removing and rebuilding them. However, the Reduced Build Alternative Option 1 is eliminated because the double-bundled 1033.5 kcmil conductors proposed in 2005 could not now be safely supported on these towers given SCE's updated wind loading criteria. Due to the tower replacement and strengthening required for 60 percent of existing structures, the alternative would require nearly as much construction as the Proposed Project. As a result, it would not significantly reduce the environmental impacts of the project as proposed.

Alternative Description

This alternative is similar to the project proposed by SCE in the 2005 West of Devers System Upgrades and analyzed as the Proposed Project in the DPV2 EIR/EIS (CPUC and BLM, 2006). In this option:

- The two sets of existing single-circuit towers would be removed and one set of new double-circuit towers would replace those towers; and,
- The existing double-circuit towers would be retained and reconductored, with double-bundled 1033.5 kcmil ACSR. Reconductoring the 40 miles of existing double-circuit towers would involve tower replacement and strengthening for 60 percent of existing structures (SCE, 2015).

When compared with the Proposed Project, each of the four circuits would consist of smaller double-bundled 1033.5 kcmil ACSR (2B-1033.5 ACSR) for their entire length, which was SCE's design for the corridor in 2005. SCE Response to Data Request ALT-18a indicates that under this alternative, 60 percent of the existing double-circuit structures would need to be replaced (SCE, 2015).

The Reduced Build Option 1 would be configured as follows:

Reduced Build Option 1, Segments 1 and 2: would be configured as follows:

- Re-use the existing double-circuit 220 kV towers (as proposed in 2005), and replace existing single-conductor circuits where they occur with a two-conductor bundle of 1033.5 kcmil ACSR (as proposed in 2005).

Reduced Build Option 1, Segment 5 would be configured as follows:

- In the westernmost 3 miles of tribal land, all transmission facilities in the existing ROW would be removed and relocated to the south.
- In this westernmost segment, 19 pairs of new double-circuit tubular steel poles would be installed and double-bundled 1033.5 kcmil ACSR conductors would be installed on the new tubular steel poles.
- On the eastern portion of the Morongo land, 30 pairs of lattice steel towers would replace the existing single-circuit towers; these towers would also be conductored the double-bundled 1033.5 kcmil ACSR conductor.

Reduced Build Option 1, Segments 3, 4, and 6 would be configured as follows:

The new double-circuit towers that would be constructed would be located at least 50 feet north of the existing double-circuit towers in Segment 3 and at least 50 feet south of the existing double-circuit towers in Segments 4 and 6. Specifically, the towers would be as follows:

- Reconfigure San Bernardino Junction to result in six individual 220 kV circuit crossings (as proposed in 2005).
- Re-use the existing double-circuit 220 kV towers (as proposed in 2005), and reconductor those two circuits using a two-conductor bundle of 1033.5 kcmil ACSR.
- Remove the two single-circuit 220 kV structures and replace them with a single set of new double-circuit towers, using a two-conductor bundle of 1033.5 kcmil ACSR (as proposed in 2005).
- Reconfigure Banning Junction to eliminate individual 220 kV circuit crossings (as proposed in 2005).

Consideration of CEQA/NEPA Criteria

Project Objectives, Purpose and Need

Basic Project Objective 1, Increase system deliverability: The Reduced Build Alternative Option 1 Alternative would achieve Basic Project Objective 1 by exceeding 2,200 MW of increased deliverability. This alternative would result in a corridor system rating of about 3,400 MW.

Basic Project Objective 2, Support renewable energy goals: This alternative would facilitate progress toward achieving California's RPS goals by increasing the capacity of the WOD corridor by roughly 1,800 MW. This would support increased import of renewable generation into the Los Angeles basin.

Basic Project Objective 3, Maximize remaining space in the corridor: This alternative would retain adequate space within the ROW (up to 175 feet) for transmission expansion, if needed by SCE in the future, as shown in Table Ap.5-2 because the new double-circuit towers could be placed as described in the Tower Relocation Alternative.

Feasibility

Legal Feasibility. This alternative appears to be consistent with the Morongo ROW Agreement based on the tower placement defined for Segment 5 (as described above).

Technical Feasibility. This alternative would reconductor some existing double-circuit towers in the corridor while requiring substantial modification or reconstruction of most other existing double-circuit towers to accommodate the double-bundled 1033.5 kcmil ACSR conductor.

This alternative would differ from the Phased Build Alternative (described in Section 4.4), which would use a single 795 Drake ACCR. The Reduced Build Alternative Option 1 would install double-bundled 1033.5 kcmil conductors, which are larger and heavier than 795 Drake ACCR. The installation of the heavier conductors would require the replacement of large numbers of the existing towers and creating greater environmental impacts from construction and demolition of towers. Although technically feasible, new wind loading criteria and ground clearance issues would require strengthening or replacement of 60 percent of the retained structures if they were to be reconductored with double-bundled 1033.5 kcmil ACSR (SCE, 2015).

Regulatory Feasibility. This alternative appears to be feasible considering regulatory factors.

Construction Timeframe. Although this alternative would avoid near-term construction activities related to removing all towers, the alternative would require replacing or retrofitting 60 percent of the existing structures. The overall construction duration could be somewhat extended when compared to that of the Proposed Project.

Reliability. Like the Proposed Project, the Reduced Build Alternative Option 1 would comply with all reliability requirements of NERC, FERC, and the CPUC.

Environmental Advantages

Ground Disturbance. This alternative would avoid the need to remove and rebuild all towers by reusing many of the existing double-circuit structures. However, to reconductor the existing double-circuit towers with a two-conductor bundle of 1033.5 kcmil ACSR would warrant replacing or retrofitting 60 percent of the existing structures, which would create additional ground disturbance and require complex workarounds that could extend the duration of construction when compared with the Proposed Project.

Environmental Disadvantages

Construction of a Reduced Build Configuration. One beneficial feature of this alternative is that it would reduce the amount of near-term construction activities in comparison with the Proposed Project (which requires removal and replacement of all of the double-circuit towers). The Reduced Build Alternative Option 1 provides 3,400 MW of corridor capacity (more than adequate for all of the CAISO's reliability projects for 2024). However, depending on other transmission system upgrades, it is possible that over the longer-term, the implementation of this alternative could require future transmission system construction activities in the WOD corridor to further increase system capacity.

Alternative Conclusion

Eliminated. The Reduced Build Alternative Option 1 meets all three Basic Project Objectives and it is technically and legally feasible. It is eliminated from detailed analysis because the required replacement of 60 percent of existing towers would not substantially avoid or reduce the environmental impacts of the Proposed Project.

5.10 Reduced Build Alternative Option 2a

The Reduced Build Alternative Option 2a was developed to maximize the conventional conductor size that could be installed on the new and existing towers, while minimizing the need for new construction in Segments 3 through 6. However, it was eliminated because data from SCE indicated that the larger conductors could not be supported on the existing towers, requiring approximately 60 percent of them to be replaced or strengthened. As a result, the alternative would not significantly reduce the environmental impacts of the project as proposed.

Alternative Description

This alternative would reuse and reconductor the existing double-circuit towers with a two-conductor bundle of 1033.5 kcmil ACSR (as proposed in 2005), and install one set of new double-circuit towers with 2B-1590 ACSR, as in the Proposed Project.

Reduced Build Option 2a, Segments 1 and 2 would be configured as follows:

- Implement the currently Proposed Project for Segments 1 and 2 with a two-conductor bundle of 1590 kcmil ACSR on each circuit.

Reduced Build Option 2a, Segment 5 would be configured as follows:

- In the westernmost 3 miles of tribal land, all transmission facilities in the existing ROW would be removed and relocated to the south.

- In this westernmost segment, 19 pairs of new double-circuit tubular steel poles would be installed and double-bundled 1033.5 kcmil ACSR conductors would be installed on the new tubular steel poles.
- On the eastern portion of the Morongo land, 30 pairs of lattice steel towers would replace the existing single-circuit towers; these towers would also be conductored the double-bundled 1033.5 kcmil ACSR conductor.

Reduced Build Option 2a: Segments 3, 4, and 6 would be configured as follows:

The new double-circuit towers that would be constructed would be located at least 50 feet north of the existing double-circuit towers in Segment 3 and at least 50 feet south of the existing double-circuit towers in Segments 4 and 6. Specifically, the towers in Segments 3, 4, and 6 would be as follows:

- Reconfigure San Bernardino Junction to result in 4 individual 220 kV circuit crossings (as in the Proposed Project).
- Re-use the existing double-circuit 220 kV towers (as proposed in 2005), and reconductor those 2 circuits using a two-conductor bundle of 1033.5 kcmil ACSR.
- Remove the 2 single-circuit 220 kV structures and replace them with a single set of new double-circuit towers, using a two-conductor bundle of 1590 kcmil ACSR (as in the Proposed Project).
- Reconfigure Banning Junction to result in four individual 220 kV circuit crossings.

Consideration of CEQA/NEPA Criteria

Project Objectives, Purpose and Need

Basic Project Objective 1, Increase system deliverability: The Reduced Build Alternative Option 2a would achieve Basic Project Objective 1 and would exceed 2,200 MW of increased deliverability. This alternative would result in a corridor system rating of about 3,400 MW.

Basic Project Objective 2, Support renewable energy goals: This alternative would facilitate progress toward achieving California's RPS goals. The alternative would meet this objective by increasing the capacity of the WOD corridor by roughly 1,800 MW. This would support increased import of renewable generation into the Los Angeles basin.

Basic Project Objective 3, Maximize remaining space in the corridor: This alternative would retain adequate space within the ROW (up to 175 feet) for transmission expansion, if needed by SCE in the future, as shown in Table Ap.5-2 because the new double-circuit towers could be placed as described in the Tower Relocation Alternative.

Feasibility

Legal Feasibility. This alternative appears to be consistent with the Morongo ROW Agreement based on the tower placement defined for Segment 5 (as described above).

Technical Feasibility. While this alternative would be technically feasible, new wind loading criteria and ground clearance issues would require strengthening or replacement of 60 percent of the retained structures if they were to be reconductored with double-bundled 1033.5 kcmil ACSR (SCE, 2015). The remaining 40 percent of the existing towers in the corridor could simply be reconductored.

In addition, this alternative would result in mismatching conductors across the four primary circuits in the corridor: the two circuits placed on the existing double-circuit towers would have 1033.5 kcmil conductor, and the two circuits installed on newly constructed towers would have 1590 kcmil conductors. Mismatched conductors are not inherently infeasible, but create transmission system management challenges that are undesirable. In addition, this alternative would retain existing line crossings at Banning Junction, which are undesirable in transmission system design but not infeasible to accommodate.

Regulatory Feasibility. This alternative appears to be feasible considering regulatory factors.

Construction Timeframe. Although this alternative would avoid near-term construction related to removing all towers, the reuse and reconductoring of some existing double-circuit towers would warrant replacing or retrofitting the remaining 60 percent of the existing structures. The overall construction duration could be somewhat extended when compared to that of the Proposed Project.

Reliability. Like the Proposed Project, the Reduced Build Alternative Option 2a would comply with all reliability requirements of NERC, FERC, and the CPUC.

Environmental Advantages

Ground Disturbance. This alternative would avoid the need to remove and rebuild all towers by reusing many of the existing double-circuit structures. However, to reconductor the existing double-circuit towers with a two-conductor bundle of 1033.5 kcmil ACSR it would be necessary to replace or retrofit 60 percent of the retained structures. This would create additional ground disturbance and require complex workarounds that could extend the duration of construction when compared with the Proposed Project.

Environmental Disadvantages

Construction of a Reduced Build Configuration. One beneficial feature of this alternative is that it would reduce the amount of near-term construction activities in comparison with the Proposed Project (which requires removal and replacement of all of the double-circuit towers). The Reduced Build Alternative Option 2a provides 3,400 MW of corridor capacity (more than adequate for all of the CAISO's reliability projects for 2024). However, depending on other transmission system upgrades, it is possible that over the longer-term, the implementation of this alternative could require future transmission system construction activities in the WOD corridor to further increase system capacity.

Alternative Conclusion

Eliminated. The Reduced Build Alternative Option 2a would meet all three Basic Project Objectives and is technically and legally feasible. It is eliminated from detailed analysis because the requirement to rebuild 60 percent of existing structures results in it being unlikely to avoid or eliminate the significant environmental impacts of the Proposed Project.

5.11 Reduced Build Alternative Option 2b

The Reduced Build Alternative Option 2b was developed to maximize the size of conventional conductors that could be installed on the new and existing towers while still staying within SCE's new wind loading guidelines. It was eliminated because SCE's wind guidelines would allow only smaller (1033.5 kcmil) and single-bundled conductors on the existing towers, and this conductor scheme would not carry enough electricity to meet the first basic project objective's minimum deliverability requirements.

Alternative Description

This alternative would retain the existing 1033.5 kcmil conductors on existing double-circuit towers without modification, and install one set of new double-circuit towers with 2B-1590 ACSR, as in the Proposed Project.

Reduced Build Option 2b, Segments 1 and 2 would be configured as follows:

- Segment 1: Retain all towers and conductors without modification
- Segment 2: Implement Proposed Project with new and modified towers and 1590 kcmil ACSR conductors.

Reduced Build Option 2b, Segment 5 would be configured as follows:

- In the westernmost 3 miles of tribal land, all transmission facilities in the existing ROW would be removed and relocated to the south.
- In this westernmost segment, 19 pairs of new double-circuit tubular steel poles would be installed and single-bundled 1033.5 kcmil ACSR conductor would be installed on the new tubular steel poles.
- On the eastern portion of the Morongo land, 30 pairs of lattice steel towers would replace the existing single-circuit towers; these towers would also be conductored with single-bundled 1033.5 kcmil ACSR conductor.

Reduced Build Option 2b: Segments 3, 4, and 6 would be configured as follows:

The new double-circuit towers that would be constructed would be located at least 50 feet north of the existing double-circuit towers in Segment 3 and at least 50 feet south of the existing double-circuit towers in Segments 4 and 6. Specifically, the towers in Segments 3 through 6 would be as follows:

- Reconfigure San Bernardino Junction to result in four individual 220 kV circuit crossings (as in the Proposed Project).
- Re-use the existing double-circuit 220 kV towers without modification and retain the existing 1033.5 kcmil ACSR.
- Remove the two single-circuit 220 kV structures and replace them with a single set of new double-circuit towers, using a two-conductor bundle of 1590 kcmil ACSR (as in the Proposed Project).
- Reconfigure Banning Junction to result in four individual 220 kV circuit crossings.

Consideration of CEQA/NEPA Criteria

Project Objectives, Purpose and Need

Basic Project Objective 1, Increase system deliverability: The Reduced Build Alternative Option 2b would only partially achieve Basic Project Objective 1 due to the small conductor size on the retained double-circuit towers. This alternative would result in a corridor system rating of about 2,300 MW, which would not sufficiently increase deliverability, as defined in this objective.

Basic Project Objective 2, Support renewable energy goals: This alternative would partially meet this objective, by adding roughly 700 MW of capacity for renewable projects. This would only partially support increased import of renewable generation into the Los Angeles basin.

Basic Project Objective 3, Maximize remaining space in the corridor: This alternative would retain adequate space within the ROW (up to 175 feet) for transmission expansion, if needed by SCE in the future, as shown in Table Ap.5-2 because the new double-circuit towers could be placed as described in the Tower Relocation Alternative.

Feasibility

Legal Feasibility. This alternative appears to be consistent with the Morongo Agreement and would therefore be legally feasible.

Technical Feasibility. This alternative would not require reconductoring of any existing towers in the corridor; the existing conductors would remain, which is a feasible option. It is noted that this alternative would not allow correction of the existing corridor operation limitations that are driven by wind loading criteria and potential ground clearance issues (SCE, 2015).

In addition, this alternative would result in mismatching conductors across the four primary circuits in the corridor: the two circuits placed on the existing double-circuit towers would have 1033.5 kcmil conductor, and the two circuits installed on newly constructed towers would have 1590 kcmil conductors. Mismatched conductors are not inherently infeasible, but create transmission system management challenges that are undesirable. In addition, this alternative would retain existing line crossings at Banning Junction, which are undesirable in transmission system design but not infeasible to accommodate.

Regulatory Feasibility. This alternative appears to be feasible considering regulatory factors.

Construction Timeframe. Because this alternative would avoid near-term construction related to removing all towers, the reuse and reconductoring of the existing double-circuit towers would result in the overall construction duration being shorter than that of the Proposed Project.

Reliability. Like the Proposed Project, the Phased Build Alternative would comply with all reliability requirements of NERC, FERC, and the CPUC.

Environmental Advantages

Ground Disturbance. This alternative would avoid the need to remove and rebuild all towers by reusing the existing double-circuit structures to support two circuits in the corridor. This would substantially shorten the duration of construction.

Environmental Disadvantages

Construction of a Reduced Build Configuration. One beneficial feature of this alternative is that it would reduce the amount of near-term construction activities in comparison with the Proposed Project (which requires removal and replacement of all of the double-circuit towers). However, due to the smaller transmission capacity of this alternative, it is more likely that over the longer-term, the implementation of Reduced Build Alternative Option 2b could require future construction within the ROW to increase system capacity as additional generation is developed.

Alternative Conclusion

Eliminated. The Reduced Build Alternative Option 2b would only partially meet Basic Project Objective 1 (increase deliverability of generation), and it would only partially meet Basic Project Objective 2. It would meet Basic Project Objective 3. The alternative is feasible, and it has the potential to reduce the environmental impacts of the Proposed Project. It is eliminated from detailed analysis because it would not meet most of the Basic Project Objectives.

5.12 High-Performance Conductor Alternative

This alternative was developed to evaluate the potential use of 4 circuits of double-bundled high-performance conductors of a similar size to SCE's proposed ACSR conductors. It is eliminated because it would not reduce or avoid the impacts of the Proposed Project.

Alternative Description

This alternative was originally considered for the WOD corridor in the DPV2 Final EIR/EIS (CPUC, 2006; Appendix 1, Section 4.3.3) in response to a comment letter filed in the CPUC's General Proceeding (A.05-04-015) prior to the DPV2 EIR/EIS public scoping period (filed: May 16, 2005 by 3M Composite Conductor Program).

The High-Performance Conductor Alternative would upgrade the 220 kV corridor by replacing the existing towers as proposed by SCE, and installing aluminum conductor composite reinforced (ACCR) or aluminum conductor composite core (ACCC) conductors instead of the proposed ACSR conductors. The conductors in this alternative would be double-bundled conductors of comparable physical size to those in the Proposed Project. The alternative conductor for the four primary circuits in this case would be 2B-1590 Lapwing ACCR, which would be capable of achieving 158% of Proposed Project electrical capacity. When compared with construction of the Proposed Project, which would upgrade the existing 220 kV transmission lines to carry 5,168 MW under normal conditions (with all lines in service) for the four primary circuits combined, this alternative would carry 8,163 MW, as shown in Table Ap.5-4.

Table Ap.5-4. High-Performance Conductor Alternative, Capacity of Individual 220 kV Circuits

Circuit	Existing Line Rating (Amperes)	Proposed Project Normal Line Rating [1] (Amperes)	High-Performance Conductor Alternative Normal Line Rating [2] (Amperes)	Proposed Project Normal Power Flow Capacity [1] (MW)	High-Performance Conductor Alternative Normal Power Flow Capacity [2] (MW)
Devers-Vista No. 1	1,150	3,230	5,102	1,292	2,041
Devers-Vista No. 2	1,240	3,230	5,102	1,292	2,041
Devers–San Bernardino	796	3,230	5,102	1,292	2,041
Devers–El Casco & El Casco–SB	1,150	3,230	5,102	1,292	2,041
WOD Corridor: Four Circuits Total	4,336	12,920	20,408	5,168	8,163

1 - Under normal conditions and SCE standard conditions, with all lines in service. Using Proposed Project 2B-1590. Each phase would consist of double-bundled (bundle of two conductors for each phase) 1,590 kcmil (one thousand circular mils) aluminum conductor steel reinforced (ACSR) conductor. (SCE Response to Data Request ALT-12.)

2 - Under normal conditions and vendor standard conditions, with all lines in service. Using alternative double-bundled Lapwing (2B-1590 kcmil) aluminum conductor composite reinforced (ACCR) conductor. (3M, 2014.)

Consideration of CEQA/NEPA Criteria

Project Objectives, Purpose and Need

Basic Project Objective 1, Increase system deliverability: This alternative would provide an increase of more than 2,200 MW to achieve higher levels of transmission capability and deliverability when compared with the Proposed Project.

Basic Project Objective 2, Support renewable energy goals: This alternative would provide comparable support for renewable energy goals as the Proposed Project, although costs would be higher.

Basic Project Objective 3, Maximize remaining space in the corridor: This alternative would retain the same amount of vacant space in the corridor as with the Proposed Project.

The High-Performance Conductor Alternative would meet all project objectives.

Feasibility

Legal Feasibility. This alternative would proceed only if it were recommended and approved by the Morongo Band of Mission Indians and a new ROW Agreement would need to be issued in order for it to move forward.

Technical Feasibility. This alternative would be feasible at greater costs than Proposed Project. Similar to the Phased Build Alternative (see Section 4.4), there would be economic consequences of greater electrical losses annually due to using the ACCR material when compared to the SCE-standard ACSR, and the unique components would require specialized spare-parts inventories and worker training for operation and maintenance.

Regulatory Feasibility. Installation of high-performance conductor appears to be feasible considering regulatory factors.

Construction Timeframe. The construction timeframe of this alternative would be comparable to that of the Proposed Project.

Reliability. The ultimate reliability of this alternative would be somewhat less than that of the Proposed Project because of the unique components that would be involved, requiring specialized spare-parts inventories and worker training for operation and maintenance. Additionally, the emergency rating of the electrical carrying capacity on ACCR conductors tends to be closer to the continuous rating, when compared with ACSR, which allows a relatively high emergency rating. This may limit or constrain how system operators use the conductors during grid emergencies.

Environmental Advantages

Ground Disturbance. Construction-related disturbance would be comparable to Proposed Project, and the greater electrical capacity of the high-performance conductors would delay the cumulative scenario impacts of installing a future 500 kV line in the corridor.

Environmental Disadvantages

Operations and Maintenance. Using ACCR or other high-performance conductors would add operation and maintenance activities by introducing conductor materials that are not standard to SCE's routine operations. These conductors and spare parts, including specialized splices or connectors that are not standardized within the SCE territory, would require storage, and operating the system would involve specialized training.

Alternative Conclusion

Eliminated. The High-Performance Conductor Alternative is eliminated from detailed analysis because it would be unlikely to reduce or avoid any project-related impacts. Additionally, it would incur higher costs than the Proposed Project without having any potential to avoid or substantially lessen the environmental impacts of the Proposed Project.

6. References

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Appendix 5, Attachment 1

Phased Build Alternative Supporting Data

Alternatives Screening Report

Attachment 1 to Appendix 5

Phased Build Alternative Supporting Data

This attachment presents supporting data for the Phased Build Alternative, including the following:

- Tables Ap5.1-1 and Ap5.1-2 present ampacity ratings for the existing system, the Proposed Project, and the Phased Build Alternative.
- Tables Ap5.1-3 and Ap5.1-4 present power flow capacities for the existing system, the Proposed Project, and the Phased Build Alternative.
- Tables Ap5.1-5 and Ap5.1-6 present power flows for the Proposed Project and the Phased Build Alternative under different modeled scenarios.

Figure 1 of this attachment illustrates the line segments of the WOD corridor that would be reconductored with 795 Drake ACCR and where existing 220 kV towers would be retained.

Capabilities of the Phased Build Alternative

Electrical Capabilities of Retaining and Reconductoring the Existing Double-Circuit Towers

The Phased Build Alternative aims to avoid many environmental impacts of the Proposed Project by retaining and reconductoring the existing double-circuit towers with high-performance conductor. The use of high-capacity conductors would maximize the power flow carried on this portion of the transmission system while minimizing the need to tear down and rebuild towers. The Phased Build Alternative would carry the generation of all projects in the CAISO's 2024 Reliability Base Case plus the flow associated with 1,400 MW from the Imperial Irrigation District, but it would have less capacity than the Proposed Project. The following tables provide background information on the electrical capabilities of the individual circuits and power flow capacities that could be achieved with the Phased Build Alternative.

Comparing the normal ampacity ratings between the Proposed Project in Table Ap5.1-1 and the Phased Build Alternative in Table Ap5.1-2 shows that approximately 59 percent of the electrical current could normally be carried by the Phased Build Alternative.

Table Ap5.1-1. Ampacity Ratings for Individual 220 kV Circuits, Existing and Proposed Project

Circuit	Existing Line Rating (Amperes)	Proposed Project Normal Line Rating [1] (Amperes)	Proposed Project Emergency Rating [2] (Amperes)
Devers–Vista No. 1	1,150	3,230	4,360
Devers–Vista No. 2	1,240	3,230	4,360
Devers–San Bernardino	796	3,230	4,360
Devers–El Casco & El Casco–SB	1,150	3,230	4,360
WOD Corridor: Four Circuits Total	**4,336**	**12,920**	**17,440**

1 - Under normal conditions and SCE standard conditions, with all lines in service. Using proposed 2B-1590: Each phase would consist of double-bundled (bundle of two conductors for each phase) 1,590 kcmil (one thousand circular mils) aluminum conductor steel reinforced (ACSR) conductor. (SCE Response to Data Request ALT-12 and ALT-19.)

2 - Under SCE emergency conditions. (SCE Response to Data Request ALT-19.)

Table Ap5.1-2. Ampacity Ratings for Individual 220 kV Circuits, Existing and Phased Build Alternative

Circuit	Existing Line Rating (Amperes)	Phased Build Alternative Normal Line Rating [1] (Amperes)	Phased Build Alternative Emergency Rating [2] (Amperes)
Devers–Vista No. 1	1,150	1,902	2,037
Devers–Vista No. 2	1,240	1,902	2,037
Devers–San Bernardino	796	1,902	2,037
Devers–El Casco & El Casco–SB	1,150	1,902	2,037
WOD Corridor: Four Circuits Total	**4,336**	**7,608**	**8,148**

1 - Under normal conditions and SCE standard conditions, with all lines in service. Using new 795 Drake ACCR, single conductor per phase. (SCE Response to Data Request ALT-19.)

2 - Under SCE emergency conditions. (SCE Response to Data Request ALT-19.)

The WOD corridor presently achieves a system transfer rating of 1,600 MW by relying on the WOD Interim Project facilities, which would be removed with the Proposed Project. Comparing the power flow capacities between the Proposed Project in Table Ap5.1-3 and the Phased Build Alternative in Table Ap5.1-4 shows that the Phased Build Alternative would improve the transfer rating of the corridor to roughly 3,000 MW rather than the 4,800 MW that could be achieved by the Proposed Project.

Table Ap5.1-3. Power Flow Capacity of Individual 220 kV Circuits, Existing and Proposed Project

Circuit	Existing Est. Power Flow Capacity (MW)	Proposed Project Normal Capacity[1] (MW)	Proposed Project Emergency Capacity[2] (MW)
Devers–Vista No. 1	460	1,292	1,744
Devers–Vista No. 2	496	1,292	1,744
Devers–San Bernardino	318	1,292	1,744
Devers–El Casco & El Casco–SB	460	1,292	1,744
WOD Corridor: Four Circuits Total	**1,794**	**5,168**	**6,976**
System Transfer Rating	**1,600**	**4,800**	

Note: Existing system transfer rating (1,600 MW) with the WOD Interim Project facilities, which would be removed with the Proposed Project.

Table Ap5.1-4. Power Flow Capacity of Individual 220 kV Circuits, Existing and Phased Build Alternative

Circuit	Existing Est. Power Flow Capacity (MW)	Phased Build Alternative Normal Capacity[1] (MW)	Phased Build Alternative Emergency Capacity[2] (MW)
Devers–Vista No. 1	460	761	815
Devers–Vista No. 2	496	761	815
Devers–San Bernardino	318	761	815
Devers–El Casco & El Casco–SB	460	761	815
WOD Corridor: Four Circuits Total	**1,794**	**3,043**	**3,259**
System Transfer Rating	**1,600**	**3,000**	

Note: Existing system transfer rating (1,600 MW) with the WOD Interim Project facilities, which would be removed with the Proposed Project.

Comparison of Proposed Project Power Flows with Phased Build Alternative

The Proposed Project would give the WOD corridor a large margin of capacity to handle power flow during all conditions and for future growth. This discussion compares the ability of the Proposed Project with the Phased Build Alternative in light of handling anticipated power flow loads. Independent power flow modeling was conducted to assess the loading in each of the corridor's circuits, during normal operations and during times when one or more circuits are out of service. The modeled outages are called contingencies, and the results of the modeling indicate the amount of loading during the worst single contingency. The following tables show the margin during the single contingency to illustrate the amount of capacity that remains on the highest-loaded circuit, in terms of the fraction not loaded. This is used as a proxy for the level of future growth that could hypothetically be accommodated after implementation of the Proposed Project or the alternative.

Table Ap5.1-5 shows the amount of power flows carried by the highest-loaded circuits and the remainder level of margin provided by the Proposed Project in two modeled scenarios. This table shows that during the worst-case scenario of all foreseeable generation projects (the Cluster 7, Phase I case plus importing an additional 1,400 MW from the Imperial Valley) and the single contingency, the Proposed Project would be loaded to about 63 percent of its capability, leaving a margin of 37 percent.

Table Ap5.1-5. Proposed Project Conductors and Resulting Flows Under N-1 Contingency

Resulting Flows in N-1 Contingency	Highest-Loaded WOD Circuit (% load)	WOD Corridor during N-1 (MW flow)	Planning Margin (% not loaded)
2024 Reliability Base Case	36 %	2,200	64 %
2019 CAISO Queue Cluster 7, Phase I	63 %	3,300	37 %

Source: Single contingency loading from Tables A2 and B2 of Attachment 2 to EIR/EIS Appendix 5.

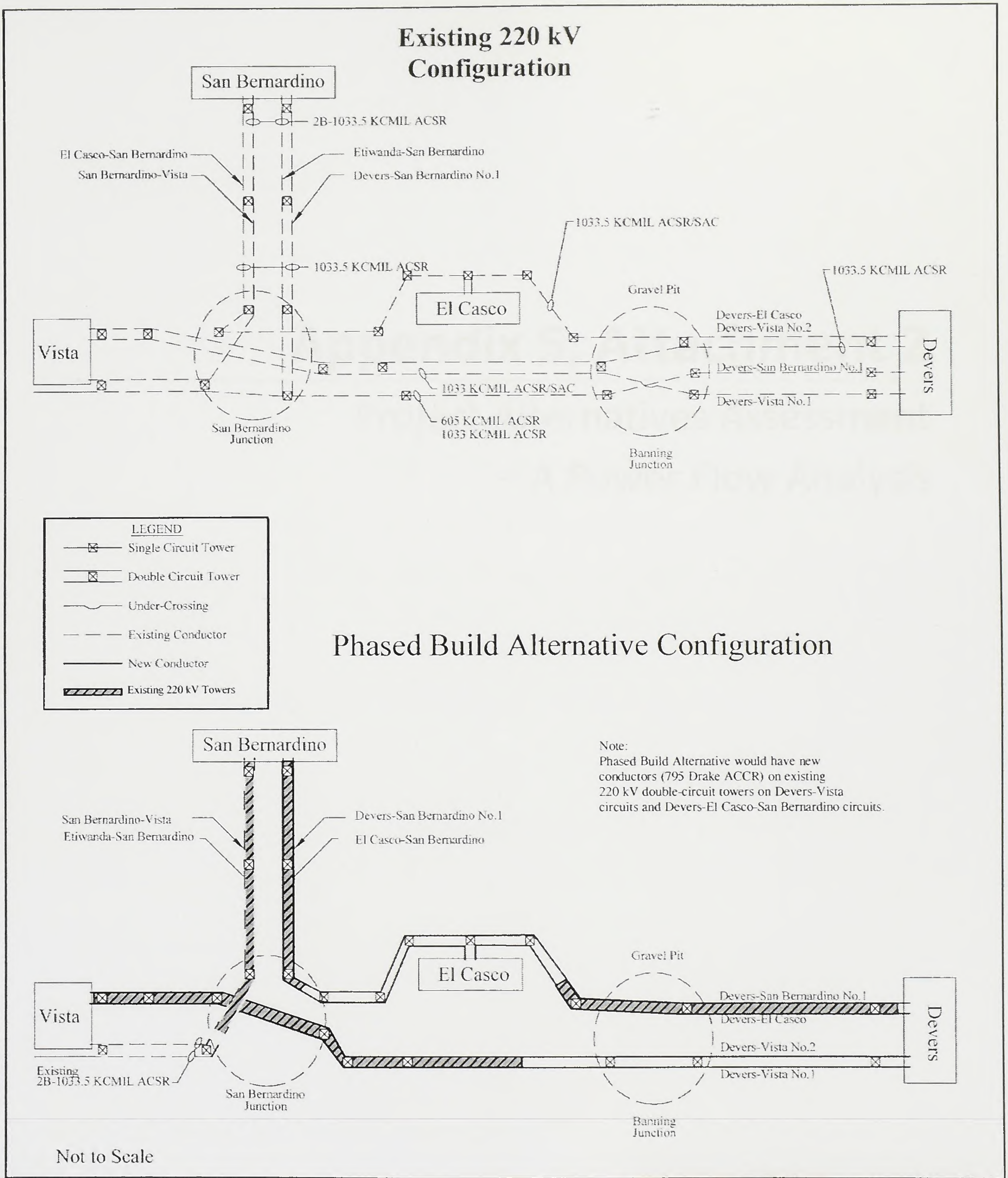
Table Ap5.1-6 shows the amount of power flows carried by the highest-loaded circuits and the remainder level of margin provided by the Phased Build Alternative. The corridor would have lower power flows and also a much lower margin under the Phased Build Alternative with four circuits of 795 Drake ACCR. The alternative conductors in the WOD corridor would reduce the ability for power to flow in the corridor when compared to the Proposed Project conductors, and this forces more flow into the Devers-Valley corridor under normal conditions. This alternative would allow SCE to deliver about 3,000 MW of output from new generation projects, through a rating that would be roughly 1,800 MW lower than that of the Proposed Project (comparing Tables A3 and A4). The lower rating translates into less ability to deliver generation and accommodate future growth. During the worst-case scenario of all foreseeable generation projects (the Cluster 7, Phase I case plus an additional 1,400 MW from the Imperial Valley) and the single contingency, the generation would overload the Phased Build Alternative. The power flow analysis and Table Ap5.1-6 shows that this alternative would successfully accommodate the scenario of the 2024 Reliability Base Case, which includes specific generation projects that the CAISO has determined to be most realistic, plus 1,400 MW from the Imperial Valley.

Table Ap5.1-6. Phased Build Alternative (795 Drake ACCR Conductors) and Resulting Flows, Under N-1 Contingency

Resulting Flows in N-1 Contingency	Highest-Loaded WOD Circuit (% load)	WOD Corridor during N-1 (MW flow)	Planning Margin (% not loaded)
2024 Reliability Base Case	67%	~2,000	33%
2019 CAISO Queue Cluster 7, Phase I	104% (overloaded)	~2,900 (overloaded)	None

Source: Single contingency loading from Tables A3 and B3 of Attachment 2 to EIR/EIS Appendix 5.

In the scenario of the 2024 Reliability Base Case, which includes specific generation projects that the CAISO has determined to be most realistic, plus an additional 1,400 MW from the Imperial Valley, a margin of 33 percent would be provided by this alternative. This is a much lower margin when compared to the margin of 64 percent provided by the Proposed Project in the same scenario (Table Ap5.1-5).



Note:
Phased Build Alternative would have new conductors (795 Drake ACCR) on existing 220 kV double-circuit towers on Devers-Vista circuits and Devers-El Casco-San Bernardino circuits.

Source: SCE, 2013.

West of Devers Upgrade Project

Figure 1
Existing and Phased Build Alternative Configuration

Appendix 5, Attachment 2

Project Alternatives Assessment – A Power Flow Analysis

ZGLOBAL
Power Engineering & Energy Solutions

"An innovative power engineering consulting firm staffed by industry-leading experts"

West of Devers Upgrade Project

CPCN Application - A.13-10-020

Project Alternatives Assessment
A Power Flow Analysis

For
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West of Devers Upgrades—an Independent Review

By

ZGlobal Power Engineering and Energy Solutions

ASPEN Environmental Group (ASPEN) engaged ZGlobal Engineering and Energy Solutions (ZGlobal) to perform an independent review of Southern California Edison's (SCE) West of Devers (WOD) upgrade project (Project) which is currently going through a CEQA process (Application A.13-10-020) by the CPUC. The ZGlobal's key assignment was to conduct the following:

a. Review the project application, PEA, official data requests and subsequent responses, and conduct an independent evaluation of the project needs and objectives
b. Identify potential alternatives
c. Conduct a power flow analysis to assess the feasibility of potential alternatives

Project Definition

Briefly, the proposed Project[1] is to upgrade (remove and/or rebuild) the existing four (4) 230 kV[2] circuits west of Devers, identified as:

1) Devers – El Casco
2) El Casco - San Bernardino
3) Devers – San Bernardino
4) Devers – Vista #1 and #2
5) Etiwanda – San Bernardino
6) San Bernardino – Vista

The proposed project includes required upgrades to affected substation, HV towers/structures, and some existing 66 kV and 12 kV distribution circuits and associated communications.

The Project proposes to replace the existing circuit conductors (1033 kcm ACSR) with larger, 2 conductor per phase or bundled 1590 kcm ACSR conductors to significantly enhance the West of Devers (WOD) corridor power carrying capacity (MW). One of the Devers – San Bernardino circuit is looped in and out of the new El Casco substation and one of the Devers – Vista circuits is proposed to be looped in and out of the planned generation project TOT185HS substation. This configures these four circuits into six segments of the transmission corridor. The Project as proposed requires a complete dismantling of the existing towers and the installation of new taller stronger towers to support the higher capacity conductors.

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[1] Project Description - http://www.cpuc.ca.gov/environment/info/aspen/westofdevers/pea/3.0_project_description_part1.pdf

[2] Southern California Edison (SCE) utilizes a 220 kV voltage reference in lieu of the normal 230 kV classification. The 230 kV reference is used as this the general ISO reference for these high voltage circuits within the CAISO Controlled Grid.

Alternative Definition

In consultation with ASPEN and the CPUC, it was determined that there was only one practical alternative that will maximize the use of existing towers and minimize tower replacement and thus minimize the environmental impact. This alternative, referred to as the "Phased Build" alternative, incorporates current technology and the use of low weight, high temperature, high capacity Aluminum Conductor Composite Reinforced (ACCR) conductors. Specifically, the alternate conductor size, 795 Drake, with approximately 2000 ampere rating was selected to support the chosen alternative for test; the modeled alternate conductor rating was 1902 / 2037 amperes (normal / emergency). This alternative conductor essentially doubles the existing corridor's MW capacity. All other sizes and/or materials considered to more closely match the proposed Project's objectives would essentially require tear down and replacement of nearly all of the existing high voltage towers.

The rational for selecting this particular alternative to the proposed Project, aside from the reduced environmental impacts as determined by others, is based on what is believed to be a more viable and realistic level of new generating facility development in the east Riverside County region. The premise for this position or opinion is based on the following key findings:

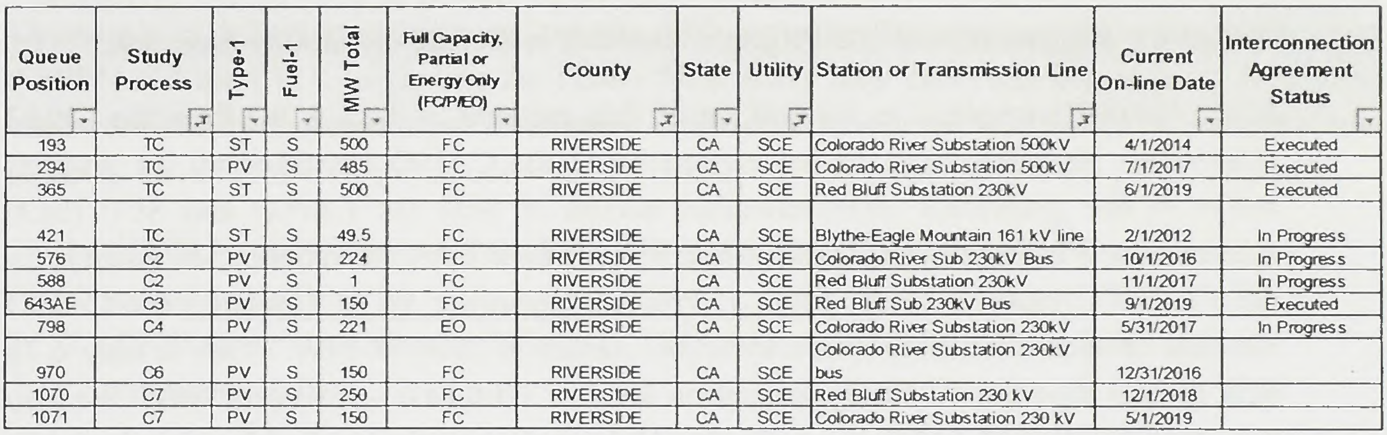
1. The original WOD upgrade project was triggered by the generation level studied in the CAISO's Generation Interconnection Transition Cluster (TC) completed in July 2010 (*nearly five (5) years ago*). The project was identified as a Delivery Network upgrade to support 2199.5 MW of new generation in SCE's Eastern Bulk System seeking Full Capacity or "Deliverability" status. Refer to Table 2.1 from the TC Phase II study below.

Table 2.1: SCE Transition Cluster Projects (Eastern Bulk System)

CAISO Queue	Point of Interconnection	Full Capacity Energy Only	Fuel	Max MW	Proposed On-Line Date (as requested by IC)
193	Colorado River 220 kV	FC	Solar	500	07/01/2013
421	Blythe-Eagle Mountain 161 kV Line	FC	Solar	49.5	02/01/2012
294	Colorado River 220 kV	FC	Solar	1,000	07/01/2013
365	Red Bluff 220 kV	FC	Solar	500	07/01/2013
431	Colorado River 220 kV	FC	Solar	150	07/01/2014
Total Phase II Transition Cluster Generation				**2,199.5**	

The original 2199.5 MW has been reduced due to either project withdrawal (Q431) or project size reduction (Q294 reduced from 1000 MW to 485 MW). The revised MW for the identified TC projects is 1534.5 MW, a reduction of 665 MW.

2. Presently, through Queue Cluster #7, the same region as reported by the CAISO Generation Interconnection Queue contains 2460 MW (10 projects) of Full Capacity projects (Q798 is an Energy Only project). Note that five (5) years after the TC study, there is an increase of only 260 MW beyond the level of generation that triggered the project originally (2200 MW). Refer to the excerpt from the CAISO's Generation Interconnection Queue below.



Queue Position	Study Process	Type-1	Fuel-1	MW Total	Full Capacity, Partial or Energy Only (FC/P/EO)	County	State	Utility	Station or Transmission Line	Current On-line Date	Interconnection Agreement Status
193	TC	ST	S	500	FC	RIVERSIDE	CA	SCE	Colorado River Substation 500kV	4/1/2014	Executed
294	TC	PV	S	485	FC	RIVERSIDE	CA	SCE	Colorado River Substation 500kV	7/1/2017	Executed
365	TC	ST	S	500	FC	RIVERSIDE	CA	SCE	Red Bluff Substation 230kV	6/1/2019	Executed
421	TC	ST	S	49.5	FC	RIVERSIDE	CA	SCE	Blythe-Eagle Mountain 161 kV line	2/1/2012	In Progress
576	C2	PV	S	224	FC	RIVERSIDE	CA	SCE	Colorado River Sub 230kV Bus	10/1/2016	In Progress
588	C2	PV	S	1	FC	RIVERSIDE	CA	SCE	Red Bluff Substation 230kV	11/1/2017	In Progress
643AE	C3	PV	S	150	FC	RIVERSIDE	CA	SCE	Red Bluff Sub 230kV Bus	9/1/2019	Executed
798	C4	PV	S	221	EO	RIVERSIDE	CA	SCE	Colorado River Substation 230kV	5/31/2017	In Progress
970	C6	PV	S	150	FC	RIVERSIDE	CA	SCE	Colorado River Substation 230kV bus	12/31/2016	
1070	C7	PV	S	250	FC	RIVERSIDE	CA	SCE	Red Bluff Substation 230 kV	12/1/2018	
1071	C7	PV	S	150	FC	RIVERSIDE	CA	SCE	Colorado River Substation 230 kV	5/1/2019	

3. Higher queued projects (Serial processed interconnections prior to the Transition Cluster) totaled 3037 MW (refer to Table 4.3.2 from the TC Phase II study report).

Table 4.3.2
Eastern Bulk Serial Interconnection Requests

CAISO Queue Position	Type	Project Size (MW)
1	Wind	16.5
3	N-Gas	850
17	N-Gas	520
49	Wind	100.5
72	Hydro	500
136	N-Gas	300
138	Wind	150
146	Solar	150
147	Solar	400
219	N-Gas	50
	Total	**3,037**

This has been reduced to 2737 MW due to withdrawal of Q136 (300 MW). From the higher queued serial projects, three have come on-line to date totaling 1400 MW (Q3, Q146, Q147). From the original higher queued project volume (3037 MW) only 1337 MW remain to come on-line (including Q72, which is closer to the San Diego and LA Basin load pocket (a potential Alberhill connection). Assuming Q72 does not progress leaves 837 MW of pre-cluster process (serial) generation projects remaining to interconnect (MW already deemed to be deliverable without the WOD upgrades).

4. The CAISO's 2024 Reliability base case, from the CAISO's 2013/2014 transmission planning process (one of the base cases used in the alternative analysis) represents the view from the CAISO's and SCE's perspective (a collaborative effort) of the level of

generation deemed viable (based on a number of criteria) and to be in place and operational in 2024. The generation level within the Eastern Bulk system for the region under analysis (refer to Table A4 in Appendix A) is:

- Total Generation On-line: 3754 MW
- Total Generation Capacity: 6901 MW

This indicates that the level of available capacity, as viewed in 2024 by the CAISO, is ~ 3147 MW. The proposed WOD Project is modeled in the 2024 reliability base case.

5. In the CAISO's response to the first set of data requests to the CAISO from the CPUC (December 30, 2014, letter to Billie Blanchard), the CAISO identified all the projects active in the generation interconnection queues of both the CAISO and SCE (SCE maintains a Wholesale Distribution Access Tariff or WDAT interconnection queue). In the CAISO's response letter, Table 1: Projects Requiring WOD Upgrades the CAISO identifies a total from both interconnection queues of 2206.78 MW. This is only 6.78 MW greater than the TC Study generation level of 2200 MW - 4.5 years later. We also note that Q798 (221 MW) is an Energy Only project and not eligible or included in deliverability or full capacity assessments; and Q1072 (100 MW) has withdrawn from the queue. This leaves approximately 1881 MW requiring the WOD upgrades – a greater than 300 MW decrease from the original TC Study requirement of 2200 MW

6. And finally, a review of the CAISO's Generation Interconnection Queue[3] provides an indication of the potential level of generation that may actually come on-line at some point in the future. Many generators enter the interconnection queue; however, most do not carry their project to completion or commercial operation. Costs for utility interconnection and network upgrades, financial security commitments, permitting issues, lack of acquiring a Power Purchase Agreement (PPA) and other issues drive a majority of projects to withdraw. The CAISO queue overall, through Cluster #7, had approximately 1179 projects submitted. The number of projects withdrawn is 892. That represents a nearly 76% drop out rate. Of the 1179 projects submitted for study by the CAISO, 97 have gone commercial, or ~ 8%.

The purpose of providing the above key findings is to set a context that underscores the basis for selecting the ***Phased Build*** alternative as a viable option. As the TC Phase 2 study indicated a need to provide deliverability for ~ 2200 MW of new queued generation projects; and whereas the CAISO response to the first set of Data Requests indicates a level of 1881 MW (nearly five years later); and whereas the PEA for the proposed Project is designed to provide deliverability for up to 4800 MW (an increase of 3200 MW); reasonable consideration should be given to a project alternative that can provide the required capacity increase including some level of growth, minimizes or reduces the environmental impact, and reduces the overall cost of the upgrades.

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[3] http://www.caiso.com/planning/Pages/GeneratorInterconnection/Default.aspx

Power Flow Analysis Approach

After reviewing the application material posted on the CPUC website, various CPUC data requests and responses provided by SCE, and results of various California Independent System Operator's (CAISO) studies posted on the ISO website, ZGlobal sought concurrence from ASPEN and the CPUC regarding the Power Flow study base cases and contingency files to be used consistently for the Project alternative evaluation. It was decided by CPUC, ASPEN and ZGlobal that the following base cases and associated data files would be used for this study:

1. CAISO's 2024 Summer Peak Reliability base case (Reliability base case) and contingency files
2. ISO's Generation Cluster 7 Phase I - 2019 base case (Cluster 7 base case) and contingency files

The Reliability base case was the latest or most up-to-date base case available on the ISO's secure website. It was the most authentic and related base case created by the ISO in cooperation with the three PTOs (PG&E, SCE and SDG&E), and with input from ISO Stakeholders as well. The ISO used the case as a foundation to prepare its 2014-2015 Transmission Plan. The future generation modeled in this base case represents the level of generation deemed viable and presumed on-line by the ISO and IOUs in 2024. It is established utilizing a set of weighed criteria such as power purchase agreements (PPAs), permitting status, executed interconnection agreements, construction status, etc. to screen out speculative generation.

The Generator Cluster 7 Phase 1 base case was also created by the ISO but with a focus on the reliability and deliverability of all generation projects that had applied under Cluster 7 as well as higher queued generation still active in the ISO's interconnection queue. Whether these generators will actually be built was not a concern at this first stage of analysis. The purpose of using this base case for study was to test the system under a more extreme generation resource level case scenario. The level of generation injected in the east Riverside County CREZ region (Colorado River Switching Station, Red Bluff Switching Station, and Devers substation) is a key variable affecting the need determination for the WOD upgrade. Refer to the key observations listed in section **Alternative Definition**.

Power Flow Sensitivities or Scenarios

A number of sensitivities were conducted within the scope of this analysis. The purpose was to establish a set of boundaries or "book ends" to directly compare the proposed Project with the alternative ***Phased Build*** project with regards to power flow capability and limits. As the study progressed, another important sensitivity analysis was added to the scope of work. This sensitivity was to increase Imperial Irrigation District (IID) exports to ISO from about 700 MW as modeled in the base cases to about 1400 MW as expected after completion of all the Path 42 upgrades (summer 2015). Summer off-peak season was also included for one additional scenario of this scope of work to determine system performance under a greater spectrum of loading conditions.

The matrix below summarizes various base cases and sensitivities evaluated:

Case or Scenario No.	Power flow case	Brief description
1	ISO 2024 Summer Peak Reliability	Latest posted ISO Reliability base case jointly developed by ISO and PTOs for Reliability analysis of ISO system
2	**Case 1** + IID export to ISO of 1400 MW	Sensitivity case to determine the thermal and voltage impact on WOD circuits of increasing IID-ISO exports to 1400 MW
3	**Case 2** + Replace project conductor with 795 Drake ACCR	Same as Case 2 above except WOD 230 kV conductors replaced with 795 Drake ACCR
4	ISO Cluster 7 Phase I (2019)	ISO posted base case to determine the flow impact on WOD circuits from the active queued generation through the Cluster 7
5	**Case 4** + IID export to ISO of 1400 MW	Sensitivity case to determine the thermal and voltage impact on WOD circuits of increasing IID-ISO exports to 1400 MW
6	**Case 5** + Replace Project conductor with 795 Drake ACCR	Same as Case 4 above except WOD 230 kV conductors replaced with 795 Drake ACCR
7	ISO Summer off-peak Cluster 7 Phase I (2019)	Cluster 7 Summer off-peak case with load level less than 50% of Summer Peak and minimum imports.

Summary of Analyses

The entire analyses are summarized in a tabular format shown in Appendix A. Tables A1 through A4 represent results for the 2024 Reliability scenarios and sensitivities. Tables B1 through B8 represent results for Cluster 7 scenarios and sensitivities. The Summer Off-Peak results are also listed (Table B8). Following a number of the tables in Appendix A are "Power Flow" plots or system diagrams to assist the reader in getting a better picture of how various substations are interconnected through transmission lines and the amount of power flowing on these transmission circuits. Refer to Appendix C for a complete listing of applicable Power Flow plots.

Case #1—ISO 2024 Summer Peak Reliability

The results of normal operating conditions (Category A), single contingency conditions (Category B) and double contingency conditions including N-1-1 (Category C) are shown in Table A1 (see Appendix A). The focus in this analysis is on the four (4) 230 kV West of Devers (WOD) circuits (six segments). This case contains WOD 230 kV circuits modeled with the proposed Project conductor size (2B-1590 kcmil ACSR). The Project conductor is rated for 3230 / 4360 amperes (normal / emergency) which are equivalent to 1287 / 1737 MVA (normal / emergency). For the common reader or non-engineer, MVA (mega volt-amps) may be assumed as approximately equal to MW (megawatts).

The left 8 columns of Table A1 describe the facility connections, voltages and acceptable current or amp rating. The right 6 columns describe the outage or contingency (base = no outage), the facility loading under that outage and the description of the worst case outage that causes the highest loading on that facility. About 70 single contingencies and 2300 double contingencies were tested using the CAISO posted contingency files.

The results show that the highest loading occurs on Devers – Vista lines and it is about 31% and 39% of the line rating under single (Alberhill-Valley 500 kV) and double (Devers-Valley 500 kV #1 and #2) contingencies respectively. This would indicate there is a significant capacity margin available on these lines.

The voltage analysis indicated that all voltages around Devers, Red Bluff and Colorado River areas are within their applicable and acceptable ratings.

Conclusion for Case #1: The proposed Project satisfies this case (*i.e.* the operational and reliability objectives are met).

Case #2—ISO 2024 Summer Peak Reliability + IID to CAISO exports of 1400 MW

IID (Imperial Irrigation District) – CAISO exports of 1400 MW is an important sensitivity as IID is delivering most of its power at the Mirage substation which is directly connected to the Devers 230 kV substation as can be seen in the power flow plot (diagram). Hence, any increase in IID delivery to Mirage would increase delivery at Devers which will increase loading on the WOD circuits. It is necessary to be sure there are no adverse thermal or voltage impacts due to this increased MW transfers from IID.

Table A2 summarizes the normal, single contingency and double contingency results. The description on how to read the table is in the preceding paragraphs. The highest loading is on Devers–Vista lines and is 36% and 46% of the line rating under single and double contingencies respectively. It is an increase of approximately 7% as compared to Case #1; however, the line loadings are still well below the line capacity. Note that we are still using the Project conductor (2B-1590 kcmil ACSR) in this case.

The voltage analysis indicated that all voltages around Devers, Red Bluff and Colorado River areas are within their applicable ratings.

Conclusion for Case #2: The proposed Project satisfies this case (*i.e.* the operational and reliability objectives are met).

Case #3 - ISO 2024 Summer Peak Reliability + IID to CAISO exports of 1400 MW + Replace Project conductor with alternate conductor (795 Drake ACCR).

This is the first test case to see if the alternate conductor can serve the same load without overloading or without causing any voltage violations.

The same 70 and 2300 contingencies for single contingency and double contingency respectively were applied to test this scenario. The results are shown in Table A3.

Results indicate there are no overloads (>100% of capacity ratings), however, the worst loading on the Devers – Vista line went up to 67% and 84% under single and double contingencies respectively. This result was fully anticipated as the conductor size, ampacity and impedance characteristics dictate higher conductor utilization.

From a planning perspective the focus needs to be on loading under single contingency conditions, not for double contingencies as NERC, WECC and ISO criteria allow generation dropping and load dropping under double contingencies. However, if the facility has additional capacity even after double contingency occurs, this is considered a bonus. This capacity will likely increase if any generation dropping is associated with that double contingency.

If this scenario is viewed as a balanced and viable alternative from a future generation modeling perspective, then the alternate conductor provides satisfactory performance. It also provides additional capacity to accommodate a level of future growth as well.

No voltage violations were found around the Devers, Red Bluff and Colorado River areas. The analysis and contingencies picked up a significantly wide area for monitoring. If there are any violations (voltage or thermal) outside of this area, it may be considered an existing problem not caused by the alternate conductor.

Conclusion for Case #3: The ***Phased Build*** alternate conductor satisfies this case (*i.e.* the operational and reliability objectives are met).

Case #4— CAISO Cluster 7 Phase I (2019)

This case is developed by the CAISO according to its Deliverability rules or guidelines, wherein all queued generators desiring full capacity deliverability status (FCDS) are modeled at full output level (renewables – *wind & solar* - are dispatched per CAISO guidelines[4]) and their combined impact on the system is determined. Consequently, the future generation modeled in this case is about 2000 MW more than what is modeled in the Reliability case. Tables A4 (Reliability case generation level) and B7 (QC7-Ph1 case generation level) in Appendix A show the total generation modeled in the two cases.

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[4] http://www.caiso.com/Documents/TechnicalPaper-GeneratorInterconnection-DeliverabilityStudyMethodology.pdf

The purpose of evaluating this case and associated sensitivities was to establish and determine an upper end of the loading spectrum. If the proposed 795 Drake ACCR conductors can withstand the extra loading imposed by the higher penetration of generation modeled in this base case, then the other less stressed scenarios will pass the test.

The results of this scenario are shown in Table B1 of Appendix A. The explanation of the various columns in this table is provided under Case #1. The results indicate no overloading of facilities and the worst loading is on the Devers–Vista circuit at 56% and 68% under single and double contingencies respectively. Again, the larger size proposed Project conductor (2B-1590 kcmil ACSR) is modeled in this case. The contingency files posted by the CAISO for this case contained approximately 200 single contingencies and approximately 3000 double contingencies which were all evaluated.

No voltage violations were identified under this scenario.

Conclusion for Case #4: The proposed Project satisfies this case.

Case #5— CAISO Cluster 7 Phase I (2019) + IID export to ISO of 1400 MW

The results for this scenario are shown in Table B2 and Table B4. Table B2 shows the thermal impacts and Table B4 shows the voltage impacts. This scenario still uses the larger size proposed Project conductor (2B-1590 kcmil ACSR). Notice the highlighted red (Overload) under normal operating conditions. This overloading means the system cannot support excessive generation arriving at Devers substation. Overloading of the Alberhill–Valley 500 kV line under normal operating conditions is a Reliability Criteria violation and must be mitigated. One solution is to curtail generation arriving at Devers until the overload goes away.

Assuming the IID export of 1400 MW to CAISO is real, the generation modeled in the Cluster 7 Phase 1 case is excessive and would need to be decreased.

Table B4 shows voltage criteria violations under single contingency conditions. Voltage deviation should not exceed 5% from the pre-contingency level. This violation is an indication of excessive reactive power loss which may be mitigated by installing shunt capacitors at the affected substations.

Conclusion for Case #5: The proposed Project conductor results in overloading the Alberhill–Valley 500 kV line under normal operating conditions.

Case #6— CAISO Cluster 7 Phase I (2019) + IID export to ISO of 1400 MW + Replace project conductor with 795 Drake ACCR

This is considered **the worst case** scenario. The results are shown in Tables B3, B5 and B6 in Appendix A. Table B3 shows that in addition to normal overloads, there are overloaded circuits under single and double contingencies. Double contingencies are not as big of a concern because generation and / or load dropping can mitigate those overloads. Overloading under a single contingency is a significant concern as the system must be designed to withstand any single contingency without mitigation. Although generation dropping is allowed, it is not a preferred mitigation under single contingencies.

A deeper look into the analysis indicated that the most severe contingency "Alberhill–Valley 500 kV" outage did not converge and the power flow failed to solve. In order to solve that contingency, about 600 MVARs of capacitors or reactive support was needed to compensate for excessive reactive power losses. The solved case indicated that the overloading under that most severe contingency would have been about 6% higher than what is shown in Table B3. [The contingency shown in Table B3 is essentially the second worst].

Thus, this case with excessive generation and a sensitivity of 1400 MW IID – CAISO export is unstable and creates thermal and voltage problems.

Tables B5 and B6 show violation of both types of voltage criteria. Table B5 shows the "voltage deviation" criteria violation. Voltage should not deviate more than 5% from the pre-contingency level for a single contingency. Table B6 shows "voltage" violation. Voltage should not dip below 90% under single or double contingencies.

Both of these violations confirm that there is a significant deficiency of reactive power (VARs) which may be compensated by installing shunt capacitors at appropriate locations.

Regarding the overloading under single contingencies, a normal method is to insert a properly designed "series reactor" in the overloaded line to reduce flow to an acceptable level.

That method was tried in this scenario but it caused more voltage violations and still did not reduce loading to an acceptable level.

Conclusion for Case #6: The ***Phased Build*** alternate conductor is not technically feasible under this scenario.

Case #7-- CAISO Summer Off-Peak Cluster 7 Phase I (2019)

This scenario was evaluated to determine the impact of a high level of solar and wind generation while the load level is less than 50% of the summer peak. Typically, a Saturday morning load level is assumed. In this Case, SCE is essentially generating as much as its load and importing only about 6% from neighboring areas. The results are summarized in Table B8.

The results indicate unacceptable system performance due to overloading of facilities under normal operating conditions. Transmission lines and transformers highlighted in red are overloaded. The overload level can be seen under the "%" column. This case has the proposed Project conductor size (2B-1590 kcmil ACSR) modeled and yet there are overloaded facilities. The same Alberhill–Valley 500 kV line which was overloaded in the summer peak case (Case #5) is also overloaded in this case. In addition, all three Devers transformers are overloaded. Since the system cannot be allowed to operate with facilities overloaded, some generation must be curtailed.

The Summer Peak case evaluated under Case #5 and this Summer Off-Peak case developed for Cluster 7 Phase I study clearly indicate excessive generation arriving at Devers substation which ultimately causes some facilities to become overloaded.

Clearly, the proposed alternate conductor which has about half the capacity of the project conductor cannot deliver all this generation arriving at Devers substation which is not handled even by the larger proposed Project conductor.

Conclusion for Case #7: The proposed Project conductor results in overloaded facilities, including the Alberhill–Valley 500 kV line and all three Devers transformers, under normal operating conditions.

APPENDIX A

Analysis Results

Tables & Power Flow Plots

TABLE A1

Preliminary analysis of WOD 230 KV circuits - CAISO 2024 Summer Peak case - Normal operating conditions - No outage (Category A)

See Case #1 Power Flow Plot

Facility									Loading				
From	Name	kV	To	Name	kV	ck	Rated Amps	Outage	%	MW	MVAR	AMPS	Outage description
24804	DEVERS	230	25666	EL CASCO	230	1	3230	base	25.8%	327	52	829	Base system (n-0)
24804	DEVERS	230	24901	VSTA	230	2	3230	base	27.8%	351	63	893	Base system (n-0)
25666	EL CASCO	230	24132	SANBRDNO	230	1	3230	base	14.2%	177	27	457	Base system (n-0)
24132	SANBRDNO	230	24804	DEVERS	230	1	3230	base	22.2%	-277	-33	719	Base system (n-0)
28311	TOT185HS	230	24804	DEVERS	230	1	3230	base	27.7%	-351	-56	895	Base system (n-0)
28311	TOT185HS	230	24901	VSTA	230	1	3230	base	27.8%	351	56	895	Base system (n-0)

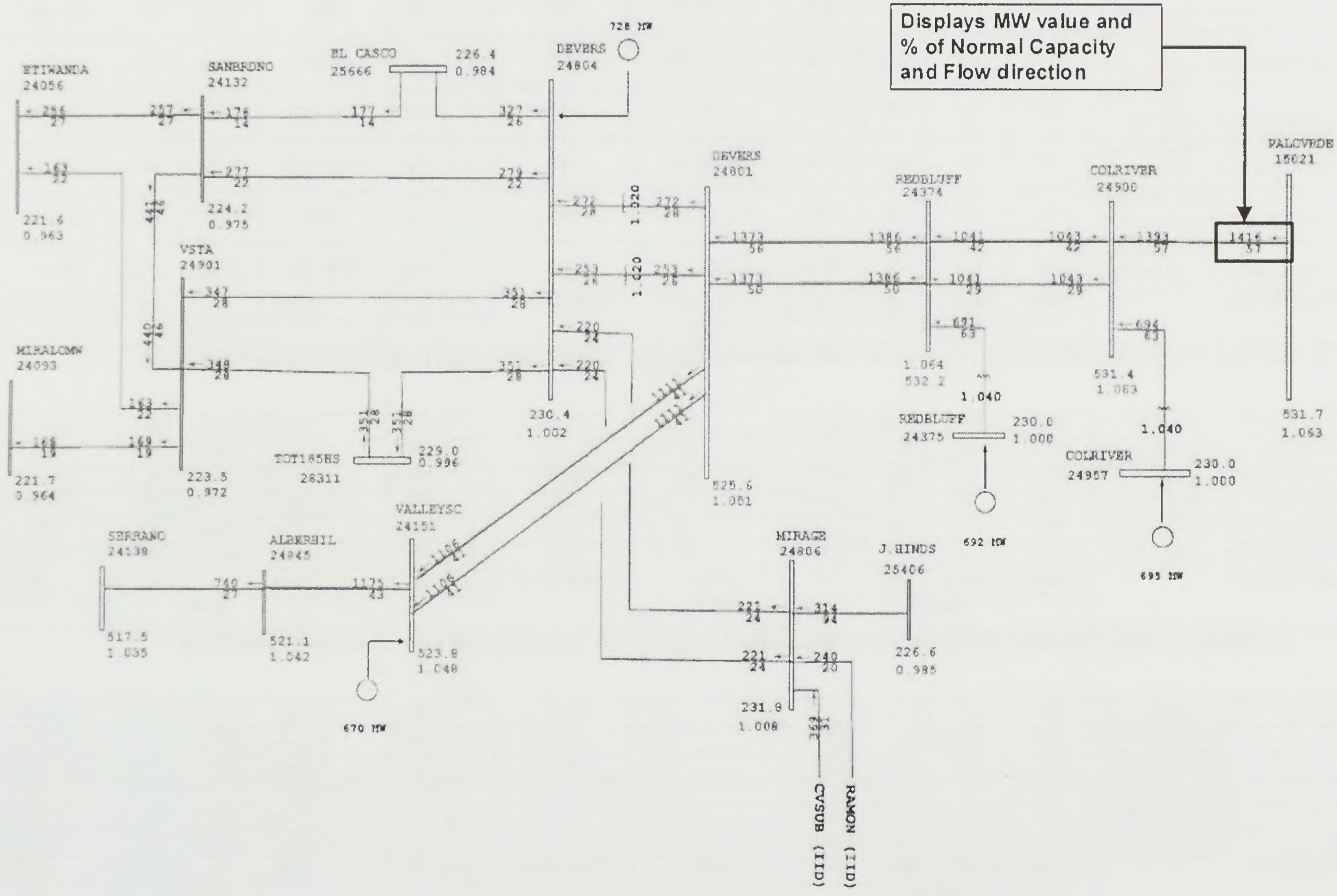
Preliminary analysis of WOD 230 KV circuits - CAISO 2024 Summer Peak case - Single Contingency analysis (Category B)

Facility								Worst	Loading				
From	Name	kV	To	Name	kV	ck	Rated Amps	Outage	%	MW	MVAR	AMPS	Worst Outage description
24804	DEVERS	230	25666	EL CASCO	230	1	4360	line_36	27.5%	469	93	1196	Line ALBERHIL - VALLEYSC 500 kV Ckt 1
24804	DEVERS	230	24901	VSTA	230	2	4360	line_36	30.7%	520	117	1333	Line ALBERHIL - VALLEYSC 500 kV Ckt 1
25666	EL CASCO	230	24132	SANBRDNO	230	1	4360	line_36	18.9%	318	35	821	Line ALBERHIL - VALLEYSC 500 kV Ckt 1
24132	SANBRDNO	230	24804	DEVERS	230	1	4360	line_36	25.4%	-425	-26	1109	Line ALBERHIL - VALLEYSC 500 kV Ckt 1
28311	TOT185HS	230	24804	DEVERS	230	1	4360	line_36	30.6%	-519	-100	1335	Line ALBERHIL - VALLEYSC 500 kV Ckt 1
28311	TOT185HS	230	24901	VSTA	230	1	4360	line_36	30.7%	519	100	1335	Line ALBERHIL - VALLEYSC 500 kV Ckt 1

Preliminary analysis of WOD 230 kV circuits - CAISO 2024 Summer Peak case - N-2 and N-1-1 contingencies analysis (Category C)

Facility								Worst	Loading				
From	Name	kV	To	Name	kV	ck	Rated Amps	Outage	%	MW	MVAR	AMPS	Worst Outage description
24804	DEVERS	230	25666	EL CASCO	230	1	4360	line_201251	35.3%	601	133	1535	Line DEVERS - SANBRDNO 230 kV ckt 1,Line ALBERHIL - VALLEYSC 500 kV Ckt 1
24804	DEVERS	230	24901	VSTA	230	2	4360	line_201751	39.4%	654	154	1714	Line DEVERS - VALLEYSC 500 kV Ckt 1,Line DEVERS - VALLEYSC 500 kV Ckt 2
25666	EL CASCO	230	24132	SANBRDNO	230	1	4360	line_201251	26.5%	447	35	1157	Line DEVERS - SANBRDNO 230 kV ckt 1,Line ALBERHIL - VALLEYSC 500 kV Ckt 1
24132	SANBRDNO	230	24804	DEVERS	230	1	4360	line_201113	34.2%	-569	-1	1492	Line DEVERS - EL CASCO 230 kV,Line ALBERHIL - VALLEYSC 500 kV Ckt 1
28311	TOT185HS	230	24804	DEVERS	230	1	4360	line_201751	39.4%	-653	-123	1716	Line DEVERS - VALLEYSC 500 kV Ckt 1,Line DEVERS - VALLEYSC 500 kV Ckt 2
28311	TOT185HS	230	24901	VSTA	230	1	4360	line_201751	39.4%	653	123	1716	Line DEVERS - VALLEYSC 500 kV Ckt 1,Line DEVERS - VALLEYSC 500 kV Ckt 2

CASE #1--ISO 2024 Summer Peak Reliability Base Case **Normal Conditions**



Displays MW value and % of Normal Capacity and Flow direction

General Electric International, Inc. PSLF Program Thu Apr 02 20:33:40 2015 cases\SCE24spEOD.sav

2014 SCE ATRA BASE CASE
STUDY SCENARIO: Peak
CASE NAME: 24-p-main

DATE: 09/18/2014
WECC SEED: 23HS1 Published 10/22/2012

MW/% rate
ISO24Reliab.drw
Rating = 1

TABLE A2

Sensitivity case #1 - IID-CAISO exports of 1400 MW

Preliminary analysis of WOD 230 KV circuits - CAISO 2024 Summer Peak case - Normal Operating conditions - No outage (Category A)

See Case #2 Power Flow Plot

Facility									Loading				
From	Name	kV	To	Name	kV	ck	Rated Amps	Outage	%	MW	MVAR	AMPS	Outage description
24804	DEVERS	230	25666	EL CASCO	230	1	3230	base	29.8%	375	50	961	Base system (n-0)
24804	DEVERS	230	24901	VSTA	230	2	3230	base	32.6%	409	64	1050	Base system (n-0)
25666	EL CASCO	230	24132	SANBRDNO	230	1	3230	base	18.0%	225	15	582	Base system (n-0)
24132	SANBRDNO	230	24804	DEVERS	230	1	3230	base	26.5%	-328	-15	855	Base system (n-0)
28311	TOT185HS	230	24804	DEVERS	230	1	3230	base	32.6%	-409	-54	1052	Base system (n-0)
28311	TOT185HS	230	24901	VSTA	230	1	3230	base	32.6%	409	54	1052	Base system (n-0)

Sensitivity case #1 - IID-CAISO exports of 1400 MW

Preliminary analysis of WOD 230 KV circuits - CAISO 2024 Summer Peak case - Single Contingency analysis (Category B)

Facility									Loading				
From	Name	kV	To	Name	kV	ck	Rated Amps	Worst Outage	%	MW	MVAR	AMPS	Worst Outage description
24804	DEVERS	230	25666	EL CASCO	230	1	4360	line_36	32.0%	538	105	1392	Line ALBERHIL - VALLEYSC 500 kV Ckt 1
24804	DEVERS	230	24901	VSTA	230	2	4360	line_36	36.0%	602	137	1565	Line ALBERHIL - VALLEYSC 500 kV Ckt 1
25666	EL CASCO	230	24132	SANBRDNO	230	1	4360	line_36	23.2%	386	25	1009	Line ALBERHIL - VALLEYSC 500 kV Ckt 1
24132	SANBRDNO	230	24804	DEVERS	230	1	4360	line_36	30.1%	-496	-4	1313	Line ALBERHIL - VALLEYSC 500 kV Ckt 1
28311	TOT185HS	230	24804	DEVERS	230	1	4360	line_36	36.0%	-600	-112	1568	Line ALBERHIL - VALLEYSC 500 kV Ckt 1
28311	TOT185HS	230	24901	VSTA	230	1	4360	line_36	36.0%	600	112	1568	Line ALBERHIL - VALLEYSC 500 kV Ckt 1

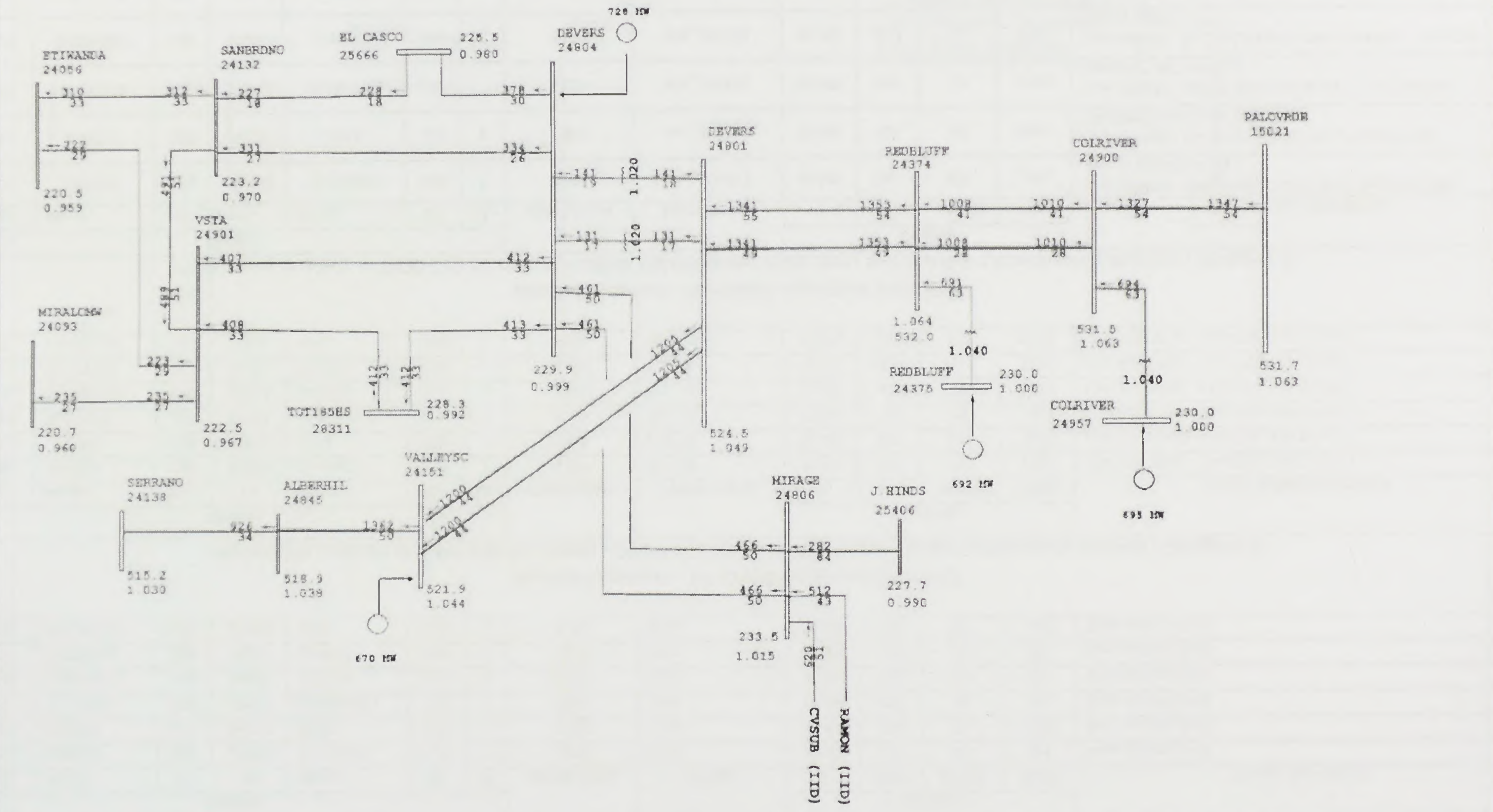
Sensitivity case #1 - IID-CAISO exports of 1400 MW

Preliminary analysis of WOD 230 KV circuits - CAISO 2024 Summer Peak case - N-2 and N-1-1 Contingency analysis (Category C)

Facility									Loading				
From	Name	kV	To	Name	kV	ck	Rated Amps	Worst Outage	%	MW	MVAR	AMPS	Worst Outage description
24804	DEVERS	230	25666	EL CASCO	230	1	4360	line_201251	41.2%	691	155	1794	Line DEVERS - SANBRDNO 230 kV ckt 1, line ALBERHIL - VALLEYSC 500 kV Ckt 1
24804	DEVERS	230	24901	VSTA	230	2	4360	line_201751	45.0%	732	191	1961	Line DEVERS - VALLEYSC 500 kV Ckt 1, line DEVERS - VALLEYSC 500 kV Ckt 2
25666	EL CASCO	230	24132	SANBRDNO	230	1	4360	line_201251	32.3%	534	19	1408	Line DEVERS - SANBRDNO 230 kV ckt 1, line ALBERHIL - VALLEYSC 500 kV Ckt 1
24132	SANBRDNO	230	24804	DEVERS	230	1	4360	line_201113	40.4%	-659	38	1760	Line DEVERS - EL CASCO 230 kV, line ALBERHIL - VALLEYSC 500 kV Ckt 1
28311	TOT185HS	230	24804	DEVERS	230	1	4360	line_201295	45.9%	-760	-163	2003	Line DEVERS - VISTA 230 kV Ckt 2, line ALBERHIL - VALLEYSC 500 kV Ckt 1
28311	TOT185HS	230	24901	VSTA	230	1	4360	line_201295	46.0%	760	163	2003	Line DEVERS - VISTA 230 kV Ckt 2, line ALBERHIL - VALLEYSC 500 kV Ckt 1

CASE #2--ISO 2024 Reliability + IID-ISO Export of 1400 MW

Normal Conditions



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2014 SCE ATRA BASE CASE
STUDY SCENARIO: Peak
CASE NAME: 24-p-main

DATE: 03/18/2014
WECC SEED: 23HS1 Published 10/22/2012

MW/% rate
ISO24Reliab+IID1400.d
Rating = 1

TABLE A3

WOD upgrades with Drake 795 ACCR conductor--CAISO 2024 Reliability case, 1400 MW IID-ISO export
Normal Operating conditions (Category A)
See Case #3 Power Flow Plot

Facility								Outage	Loading				Outage Description
From	Name	kV	To	Name	kV	ck	Rated Amps		%	MW	MVAR	AMPS	
24804	DEVERS	230	25666	EL CASCO	230	1	1902	base	46.0%	347	46	873	Base system (n-0)
24804	DEVERS	230	24901	VSTA	230	2	1902	base	46.7%	354	39	889	Base system (n-0)
25666	EL CASCO	230	24132	SANBRDNO	230	1	1902	base	25.8%	188	-6	490	Base system (n-0)
24132	SANBRDNO	230	24804	DEVERS	230	1	1902	base	40.4%	-293	11	769	Base system (n-0)
28311	TOT185HS	230	24804	DEVERS	230	1	1902	base	46.8%	-352	-28	890	Base system (n-0)
28311	TOT185HS	230	24901	VSTA	230	1	1902	base	46.8%	352	28	890	Base system (n-0)

WOD upgrades with Drake 795 ACCR conductor--CAISO 2024 Reliability case, 1400 MW IID-ISO export
Single Contingency (Category B)

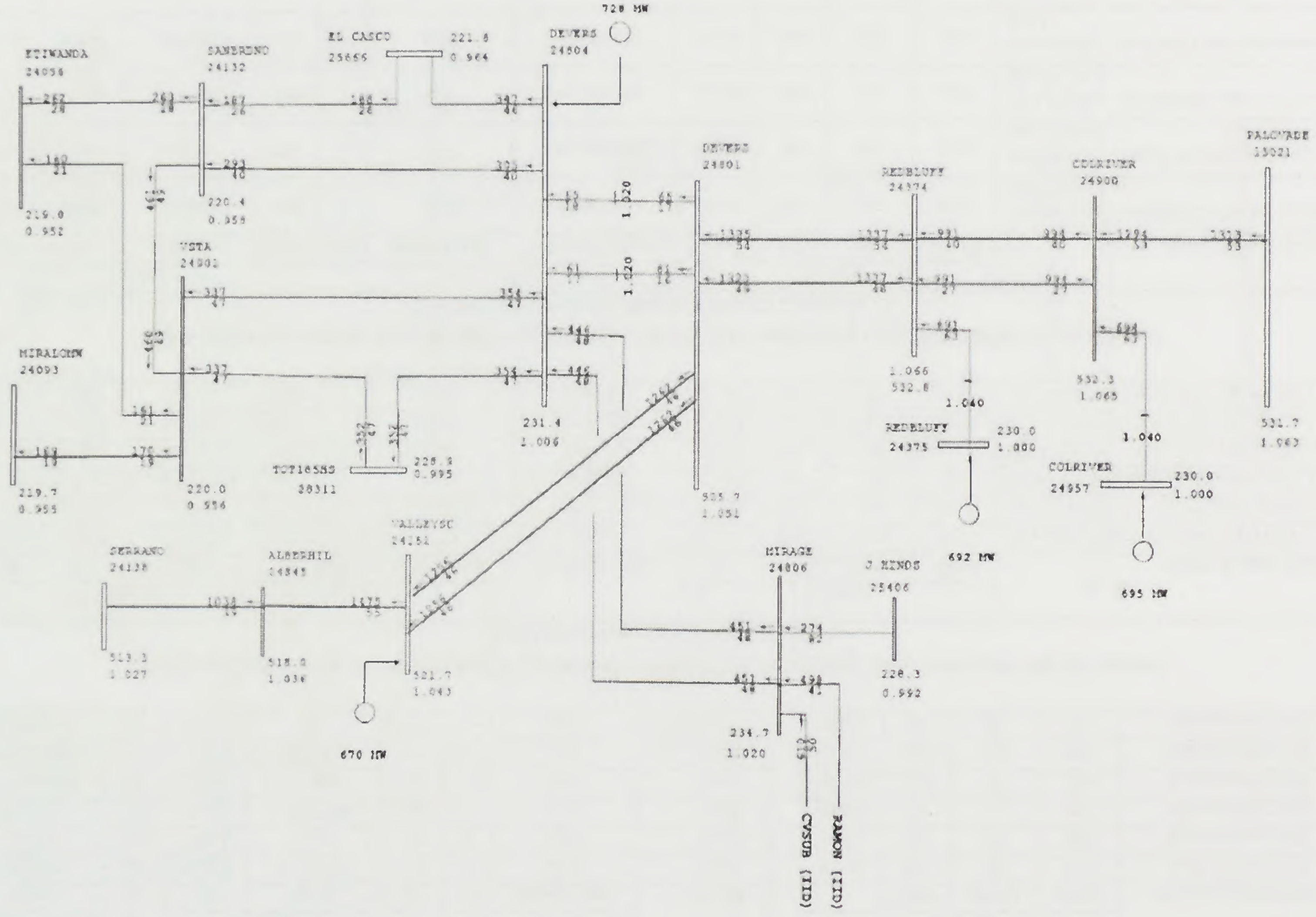
Facility								Worst Outage	Loading				Worst Outage Description
From	Name	kV	To	Name	kV	ck	Rated Amps		%	MW	MVAR	AMPS	
24804	DEVERS	230	25666	EL CASCO	230	1	2037	line_36	64.6%	518	106	1313	Line ALBERHIL - VALLEYSC 500 kV Ckt 1
24804	DEVERS	230	24901	VSTA	230	2	2037	line_36	67.3%	542	104	1371	Line ALBERHIL - VALLEYSC 500 kV Ckt 1
25666	EL CASCO	230	24132	SANBRDNO	230	1	2037	line_36	45.3%	345	-16	922	Line ALBERHIL - VALLEYSC 500 kV Ckt 1
24132	SANBRDNO	230	24804	DEVERS	230	1	2037	line_36	59.7%	-450	46	1216	Line ALBERHIL - VALLEYSC 500 kV Ckt 1
28311	TOT185HS	230	24804	DEVERS	230	1	2037	line_36	67.4%	-536	-75	1372	Line ALBERHIL - VALLEYSC 500 kV Ckt 1
28311	TOT185HS	230	24901	VSTA	230	1	2037	line_36	67.4%	536	75	1372	Line ALBERHIL - VALLEYSC 500 kV Ckt 1

WOD upgrades with Drake 795 ACCR conductor--CAISO 2024 Reliability case, 1400 MW IID-ISO export
Double Contingency, N-2 and N-1-1 (Category C)

Facility								Worst Outage	Loading				Worst Outage Description
From	Name	kV	To	Name	kV	ck	Rated Amps		%	MW	MVAR	AMPS	
24804	DEVERS	230	25666	EL CASCO	230	1	2037	line_201251	80.5%	645	143	1638	Line DEVERS - SANBRDNO 230 kV ckt 1,Line ALBERHIL - VALLEYSC 500 kV Ckt 1
24804	DEVERS	230	24901	VSTA	230	2	2037	line_201751	84.3%	659	162	1717	Line DEVERS - VALLEYSC 500 kV Ckt 1,Line DEVERS - VALLEYSC 500 kV Ckt 2
25666	EL CASCO	230	24132	SANBRDNO	230	1	2037	line_201251	61.1%	459	-47	1244	Line DEVERS - SANBRDNO 230 kV ckt 1,Line ALBERHIL - VALLEYSC 500 kV Ckt 1
24132	SANBRDNO	230	24804	DEVERS	230	1	2037	line_201113	77.2%	-569	107	1573	Line DEVERS - EL CASCO 230 kV,Line ALBERHIL - VALLEYSC 500 kV Ckt 1
28311	TOT185HS	230	24804	DEVERS	230	1	2037	line_201751	84.4%	-650	-115	1719	Line DEVERS - VALLEYSC 500 kV Ckt 1,Line DEVERS - VALLEYSC 500 kV Ckt 2
28311	TOT185HS	230	24901	VSTA	230	1	2037	line_201751	84.4%	650	115	1719	Line DEVERS - VALLEYSC 500 kV Ckt 1,Line DEVERS - VALLEYSC 500 kV Ckt 2

CASE #3--ISO 2024 Reliability + IID-ISO Export of 1400 MW + Alternate Conductor

Normal Conditions



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2014 SCE ATRA BASE CASE
STUDY SCENARIO: Peak
CASE NAME: 24-p-main

DATE: 03/18/2014
WECC BEED: 22HS1 Published 10/22/2012

MW/% rate
ISO24Reliab+IID1400+A
Rating = 1

TABLE A4

CAISO 2024 Summer Peak Reliability Base case

Generation modeled in Colorado River, Red Bluff and Devers area

Total Generation On-line: 3754 MW - Total Generation Capacity: 6901 MW

BUS-NO	NAME	KV	ID	ST	PGEN	PMAX	PMIN	QGEN	QMAX	QMIN	AREA	ZONE	Major Point of Interconnection
24957	COLRIVER	230	F2	1	185.4	515	0	23.9	169.3	-169.3	24	944	Colorado River 230 kV Sub
24957	COLRIVER	230	F0	1	54	150	0	23.9	72.6	-72.6	24	944	Colorado River 230 kV Sub
24957	COLRIVER	230	F3	1	90	250	0	23.9	82.2	-82.2	24	944	Colorado River 230 kV Sub
24999	DEVRSVC1	500	1	1	0	0	0	-100	100	-100	24	940	Devers 500 kV sub
29041	IEEC-G1	19.5	1	1	335	405	203	169.4	280	-200	24	940	Valley 500 kV sub
29042	IEEC-G2	19.5	2	1	335	405	203	169.4	280	-200	24	940	Valley 500 kV sub
24921	MNTV-CT1	18	1	1	129.7	185	0	40.7	115	-61	24	940	MNTVIEW 230 kV sub
24922	MNTV-CT2	18	1	1	129.7	185	0	40.7	115	-61	24	940	MNTVIEW 230 kV sub
24924	MNTV-CT3	18	1	1	129.7	185	0	40.6	115	-61	24	940	MNTVIEW 230 kV sub
24925	MNTV-CT4	18	1	1	129.7	185	0	40.6	115	-61	24	940	MNTVIEW 230 kV sub
24923	MNTV-ST1	18	1	1	225.1	321	0	55.9	200	-100	24	940	MNTVIEW 230 kV sub
24926	MNTV-ST2	18	1	1	225.1	321	0	56.3	200	-100	24	940	MNTVIEW 230 kV sub
24375	REDBLUFF	230	F1	1	192.2	534	0	53.2	175.5	-175.5	24	943	Red Bluff 230 kV sub
24375	REDBLUFF	230	F0	1	82.4	229	0	53.2	75.3	-75.3	24	943	Red Bluff 230 kV sub
24963	RPSEOD04	0.32	1	1	46.7	129.8	0	13.4	71.8	0	24	943	Red Bluff 230 kV sub
24964	RPSEOD05	0.32	1	1	56.5	156.9	0	14.6	86.8	0	24	943	Red Bluff 230 kV sub
24965	RPSEOD06	0.32	1	1	46.7	129.8	0	13.4	71.8	0	24	943	Red Bluff 230 kV sub
24966	RPSEOD07	0.32	1	1	56.5	156.9	0	14.6	86.8	0	24	943	Red Bluff 230 kV sub
24976	RPSEOD13	0.34	1	1	90	250	0	13.2	150	0	24	944	Colorado River 230 kV Sub
24977	RPSEOD14	13.8	1	1	50.4	140	0	8.7	87.3	0	24	944	Colorado River 230 kV Sub
24978	RPSEOD15	13.8	1	1	50.4	140	0	9.1	87.3	0	24	944	Colorado River 230 kV Sub
24982	RPSEOD28	0.34	1	1	45	125	0	30	60.5	-60.5	24	944	Colorado River 230 kV Sub
24983	RPSEOD29	0.34	2	1	45	125	0	30	60.5	-60.5	24	944	Colorado River 230 kV Sub
24984	RPSEOD34	0.34	3	1	45	125	0	30.1	60.5	-60.5	24	944	Colorado River 230 kV Sub
24985	RPSEOD35	0.34	4	1	39.6	110	0	28.5	53.3	-53.3	24	944	Colorado River 230 kV Sub
94465	RPSEOD40	21	1	1	61.6	171	0	0.1	130	-43.3	24	943	Red Bluff 230 kV sub
94466	RPSEOD41	21	1	1	61.6	171	0	0.1	130	-43.3	24	943	Red Bluff 230 kV sub
95315	RPSEOD43	0.31	1	1	88.2	245	0	2.1	58.8	-100	24	943	Red Bluff 230 kV sub
29101	TOT032G1	13.8	1	1	91	107	0	28.8	56	-44	24	940	Devers 500 kV sub
29102	TOT032G2	13.8	1	1	91	107	0	28.8	56	-44	24	940	Devers 500 kV sub
29103	TOT032G3	13.8	1	1	91	107	0	28.8	56	-44	24	940	Devers 500 kV sub
29104	TOT032G4	13.8	1	1	91	107	0	28.8	56	-44	24	940	Devers 500 kV sub
29105	TOT032G5	13.8	1	1	91	107	0	28.8	56	-44	24	940	Devers 500 kV sub
29106	TOT032G6	13.8	1	1	91	107	0	28.8	56	-44	24	940	Devers 500 kV sub
29107	TOT032G7	13.8	1	1	91	107	0	28.8	56	-44	24	940	Devers 500 kV sub
29108	TOT032G8	13.8	1	1	91	107	0	28.8	56	-44	24	940	Devers 500 kV sub

TABLE B1

Preliminary analysis of WOD 230 KV circuits - CAISO Cluster 7 Phase I, 2019 Summer Peak case - Normal operating conditions - No outage (Category A)

See Case #4 Power Flow Plot

Facility									Loading				
From	Name	kV	To	Name	kV	ck	Rated Amps	Outage	%	MW	MVAR	AMPS	Outage description
24804	DEVERS	230	25666	EL CASCO	230	1	3230	base	37.6%	475	51	1214	Base system (n-0)
24804	DEVERS	230	24901	VSTA	230	2	3230	base	44.6%	559	85	1438	Base system (n-0)
25666	EL CASCO	230	24132	SANBRONO	230	1	3230	base	28.2%	353	-8	912	Base system (n-0)
24132	SANBRONO	230	24804	DEVERS	230	1	3230	base	38.4%	-477	30	1242	Base system (n-0)
28311	TOT185HS	230	24804	DEVERS	230	1	3230	base	18.7%	-233	-19	605	Base system (n-0)
28311	TOT185HS	230	24901	VSTA	230	1	3230	base	30.7%	383	6	992	Base system (n-0)

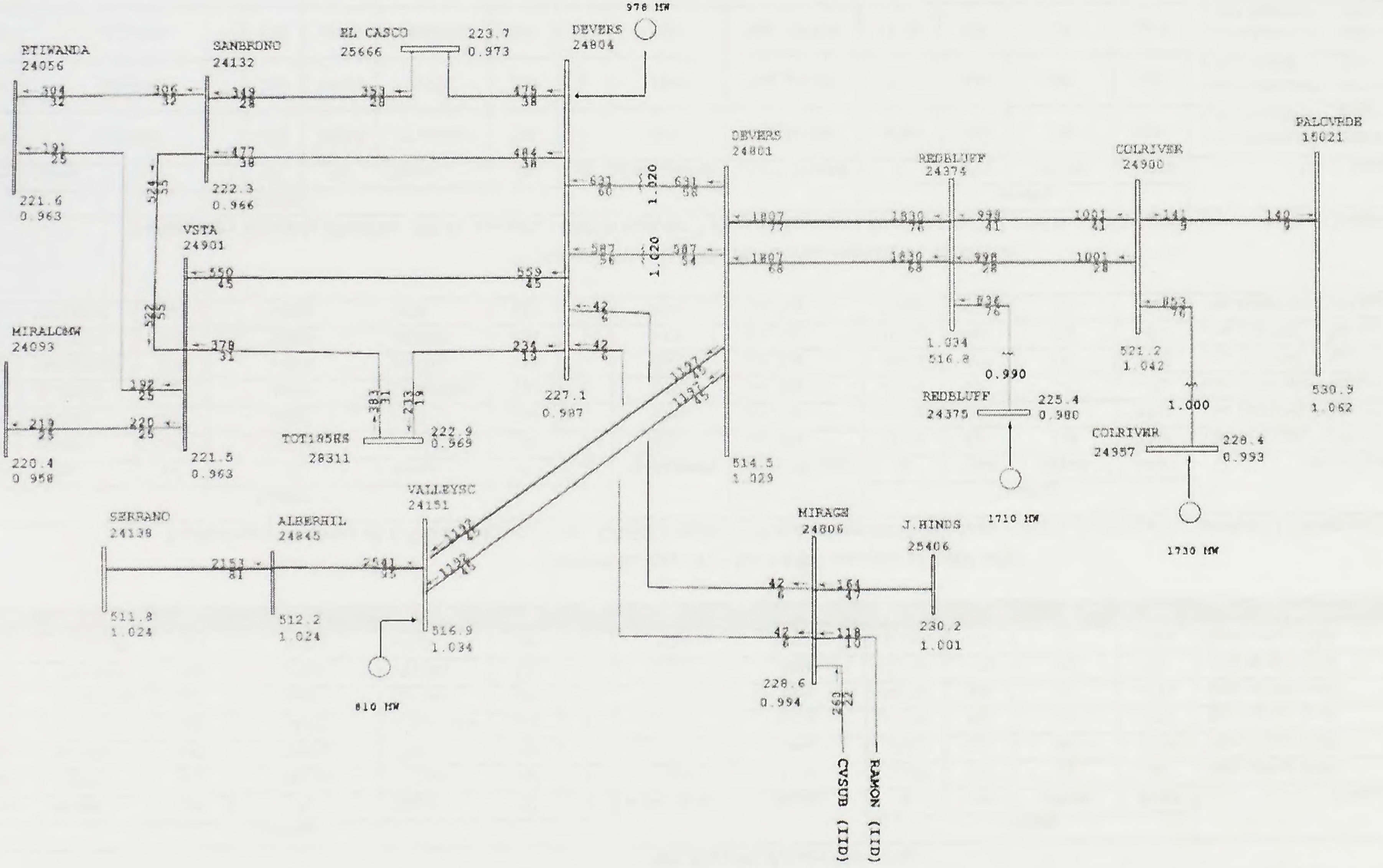
Preliminary analysis of WOD 230 KV circuits - CAISO Cluster 7 Phase I, 2019 Summer Peak case - Single contingency conditions (Category B)

Facility									Loading				
From	Name	kV	To	Name	kV	ck	Rated Amps	Worst Outage	%	MW	MVAR	AMPS	Worst Outage description
24804	DEVERS	230	25666	EL CASCO	230	1	4360	line_238	45.9%	744	164	1998	Line ALBERHIL 500.0 to VALLEYSC 500.0 Circuit 1
24804	DEVERS	230	24901	VSTA	230	2	4360	line_238	56.4%	902	249	2457	Line ALBERHIL 500.0 to VALLEYSC 500.0 Circuit 1
25666	EL CASCO	230	24132	SANBRDNO	230	1	4360	line_238	38.5%	615	-5	1680	Line ALBERHIL 500.0 to VALLEYSC 500.0 Circuit 1
24132	SANBRDNO	230	24804	DEVERS	230	1	4360	line_238	49.1%	-771	113	2142	Line ALBERHIL 500.0 to VALLEYSC 500.0 Circuit 1
28311	TOT185HS	230	24804	DEVERS	230	1	4360	line_238	26.3%	-417	-19	1146	Line ALBERHIL 500.0 to VALLEYSC 500.0 Circuit 1
28311	TOT185HS	230	24901	VSTA	230	1	4360	line_238	35.7%	567	23	1558	Line ALBERHIL 500.0 to VALLEYSC 500.0 Circuit 1

Preliminary analysis of WOD 230 KV circuits - CAISO Cluster 7 Phase I, 2019 Summer Peak case - N-2 and N-1-1 contingency conditions (Category C)

Facility								Worst Outage	Loading				
From	Name	kV	To	Name	kV	ck	Rated Amps		%	MW	MVAR	AMPS	Worst Outage description
24804	DEVERS	230	25666	EL CASCO	230	1	4360	line_202310	61.1%	971	286	2662	Line SANBRONO 230.0 to DEVERS 230.0 Circuit 1, line ALBERHIL 500.0 to VALLEYSC 500.0 Circuit 1
24804	DEVERS	230	24901	VSTA	230	2	4360	line_202310	68.3%	1070	370	2976	Line SANBRONO 230.0 to DEVERS 230.0 Circuit 1, line ALBERHIL 500.0 to VALLEYSC 500.0 Circuit 1
25666	EL CASCO	230	24132	SANBRDNO	230	1	4360	line_202310	53.6%	835	-19	2336	Line SANBRONO 230.0 to DEVERS 230.0 Circuit 1, line ALBERHIL 500.0 to VALLEYSC 500.0 Circuit 1
24132	SANBRONO	230	24804	DEVERS	230	1	4360	line_202807	64.8%	-988	230	2827	Line DEVERS 230.0 to EL CASCO 230.0 Circuit 1, line ALBERHIL 500.0 to VALLEYSC 500.0 Circuit 1
28311	TOT185HS	230	24804	DEVERS	230	1	4360	line_202778	35.6%	-545	-30	1552	Line DEVERS 230.0 to VSTA 230.0 Circuit 2, line ALBERHIL 500.0 to VALLEYSC 500.0 Circuit 1
28311	TOT185HS	230	24901	VSTA	230	1	4360	line_202778	45.4%	695	31	1978	Line DEVERS 230.0 to VSTA 230.0 Circuit 2, line ALBERHIL 500.0 to VALLEYSC 500.0 Circuit 1

CASE #4--ISO Cluster 7 Phase I (2019) case **Normal Conditions**



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2014 SCE ATRA BASE CASE STUDY SCENARIO: Peak CASE NAME: 19-p-main	DATE: 02/18/2014 WECC SEED: 19HS2 Published 9/10/2013	MW/% rate C7PhI.drw Rating = 1

TABLE B2

Sensitivity case #2 - IID-CAISO exports of 1400 MW
Preliminary analysis of WOD 230 KV circuits - CAISO Cluster 7 Phase I Summer Peak case - Normal Operating conditions - No outage (Category A)
See Case #5 Power Flow Plot

Facility							Rated Amps	Outage	Loading				Outage description
From	Name	kV	To	Name	kV	ck			%	MW	MVAR	AMPS	
24804	DEVERS	230	25666	EL CASCO	230	1	3230	base	42.2%	531	51	1361	Base system (n-0)
24804	DEVERS	230	24901	VSTA	230	2	3230	base	50.4%	631	96	1629	Base system (n-0)
25666	EL CASCO	230	24132	SANBRDNO	230	1	3230	base	32.8%	409	-24	1059	Base system (n-0)
24132	SANBRDNO	230	24804	DEVERS	230	1	3230	base	43.7%	-541	61	1412	Base system (n-0)
28311	TOT185HS	230	24804	DEVERS	230	1	3230	base	21.9%	-272	-12	707	Base system (n-0)
28311	TOT185HS	230	24901	VSTA	230	1	3230	base	33.9%	422	1	1096	Base system (n-0)
24845	**ALBERHIL**	**500**	**24151**	**VALLEYSC**	**500**	**1**	**3000**	**base**	**103.0%**	**-2744**	**-75**	**3090**	**Base system (n-0)**

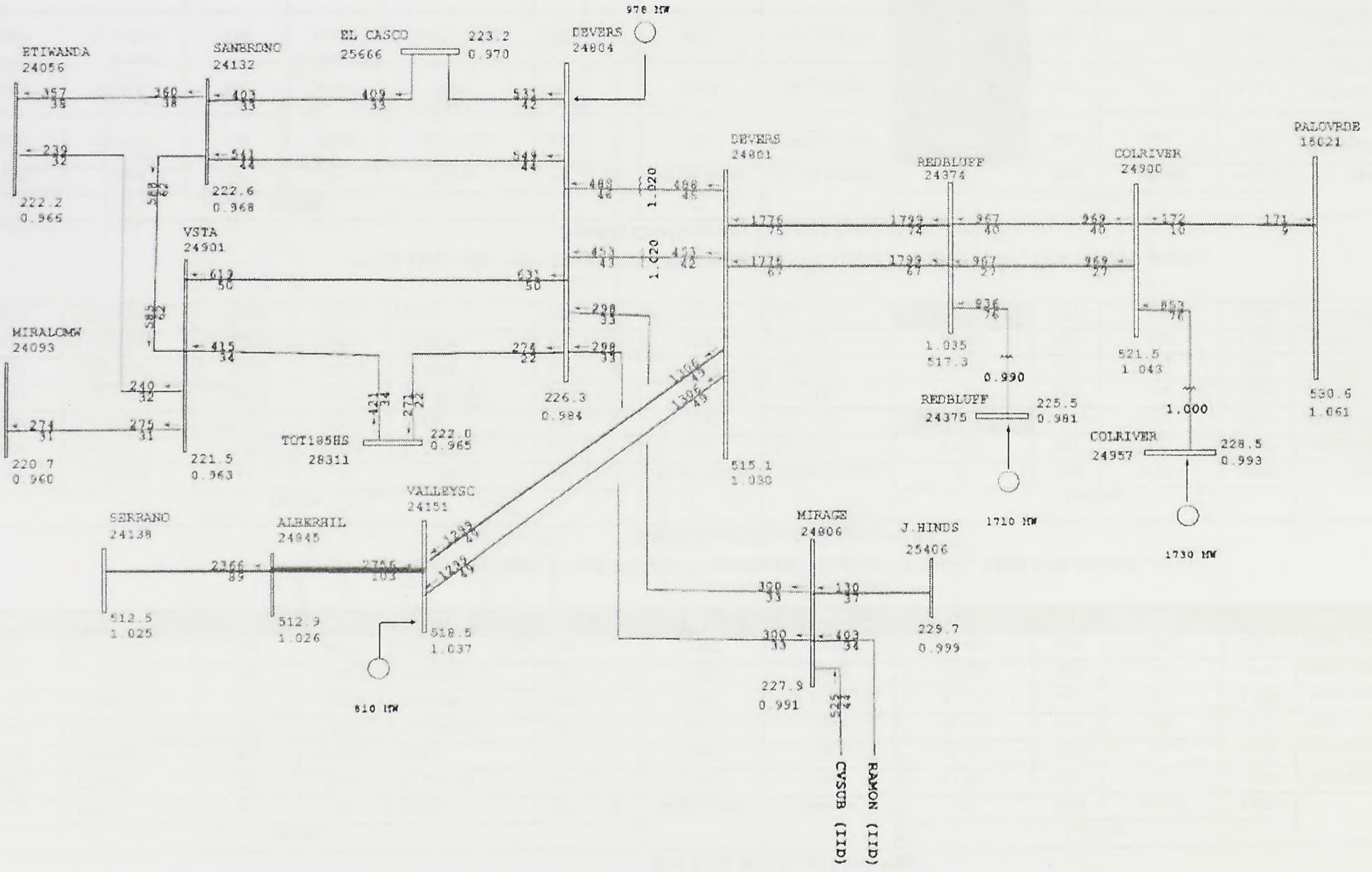
Sensitivity case #2 - IID-CAISO exports of 1400 MW
Preliminary analysis of WOD 230 KV circuits - CAISO Cluster 7 Phase I Summer Peak case - Single Contingency analysis (Category B)

Facility							Rated Amps	Worst Outage	Loading				Worst Outage description
From	Name	kV	To	Name	kV	ck			%	MW	MVAR	AMPS	
24804	DEVERS	230	25666	EL CASCO	230	1	4360	line_238	51.3%	821	210	2234	Line ALBERHIL 500.0 to VALLEYSC 500.0 Circuit 1
24804	DEVERS	230	24901	VSTA	230	2	4360	line_238	63.3%	996	320	2759	Line ALBERHIL 500.0 to VALLEYSC 500.0 Circuit 1
25666	EL CASCO	230	24132	SANBRDNO	230	1	4360	line_238	43.8%	690	-4	1911	Line ALBERHIL 500.0 to VALLEYSC 500.0 Circuit 1
24132	SANBRDNO	230	24804	DEVERS	230	1	4360	line_238	55.3%	-854	147	2413	Line ALBERHIL 500.0 to VALLEYSC 500.0 Circuit 1
28311	TOT185HS	230	24804	DEVERS	230	1	4360	line_238	30.0%	-466	-26	1307	Line ALBERHIL 500.0 to VALLEYSC 500.0 Circuit 1
28311	TOT185HS	230	24901	VSTA	230	1	4360	line_238	39.6%	616	28	1727	Line ALBERHIL 500.0 to VALLEYSC 500.0 Circuit 1

Sensitivity case #2 - IID-CAISO exports of 1400 MW
Preliminary analysis of WOD 230 KV circuits - CAISO Cluster 7 Phase I Summer Peak case - N-2 and N-1-1 Contingency analysis (Category C)

Facility							Rated Amps	Worst Outage	Loading				Worst Outage description
From	Name	kV	To	Name	kV	ck			%	MW	MVAR	AMPS	
24804	DEVERS	230	25666	EL CASCO	230	1	4360	line_202310	68.9%	1065	376	3000	Line SANBRDNO 230.0 to DEVERS 230.0 Circuit 1, line ALBERHIL 500.0 to VALLEYSC 500 Circuit 1
24804	DEVERS	230	24901	VSTA	230	2	4360	line_202310	77.1%	1169	485	3360	Line SANBRDNO 230.0 to DEVERS 230.0 Circuit 1, line ALBERHIL 500.0 to VALLEYSC 500 Circuit 1
25666	EL CASCO	230	24132	SANBRDNO	230	1	4360	line_202310	61.1%	924	-14	2665	Line SANBRDNO 230.0 to DEVERS 230.0 Circuit 1, line ALBERHIL 500.0 to VALLEYSC 500 Circuit 1
24132	SANBRDNO	230	24804	DEVERS	230	1	4360	line_202807	73.3%	-1080	291	3197	Line DEVERS 230.0 to EL CASCO 230.0 Circuit 1, line ALBERHIL 500.0 to VALLEYSC 500 Circuit 1
28311	TOT185HS	230	24804	DEVERS	230	1	4360	line_202777	37.8%	-579	-29	1648	Line DEVERS 230.0 to VSTA 230.0 Circuit 2, line ALBERHIL 500.0 to VALLEYSC 500 Circuit 1
28311	TOT185HS	230	24901	VSTA	230	1	4360	line_202777	47.6%	729	30	2074	Line DEVERS 230.0 to VSTA 230.0 Circuit 2, line ALBERHIL 500.0 to VALLEYSC 500 Circuit 1

CASE #5--ISO Cluster 7 Phase I + IID-ISO Export of 1400 MW **Normal Conditions**



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2014 SCE ATRA BASE CASE
STUDY SCENARIO: Peak
CASE NAME: 19-p-main

DATE: 09/10/2014
WECC SEED: 19HS2 Published 9/10/2013

MW/% rate
C7PhI+IID1400.drw
Rating = 1

TABLE B3

WOD upgrades with Drake 795 ACCR conductor--Cluster 7 Phase I, 1400 MW IID-ISO export
Normal Operating conditions (Category A)
See Case #6 Power Flow Plot

Facility									Loading				
From	Name	kV	To	Name	kV	ck	Rated Amps	Outage	%	MW	MVAR	AMPS	Outage description
24804	DEVERS	230	25666	EL CASCO	230	1	1902	base	64.8%	484	37	1232	Base system (n-0)
24804	DEVERS	230	24901	VSTA	230	2	1902	base	66.8%	499	38	1271	Base system (n-0)
25666	EL CASCO	230	24132	SANBRDNO	230	1	1902	base	48.7%	345	-68	927	Base system (n-0)
24132	SANBRDNO	230	24804	DEVERS	230	1	1902	base	61.0%	-429	99	1158	Base system (n-0)
28311	TOT185HS	230	24804	DEVERS	230	1	1902	base	49.9%	-368	-35	949	Base system (n-0)
28311	TOT185HS	230	24901	VSTA	230	1	1902	base	70.0%	518	18	1331	Base system (n-0)
24845	**ALBERHIL**	**500**	**24151**	**VALLEYSC**	**500**	**1**	**2598**	**base**	**107.1%**	**-2844**	**-108**	**3213**	**Base system (n-0)**

WOD upgrades with Drake 795 ACCR conductor--Cluster 7 Phase I, 1400 MW IID-ISO export
Single Contingency (Category B)

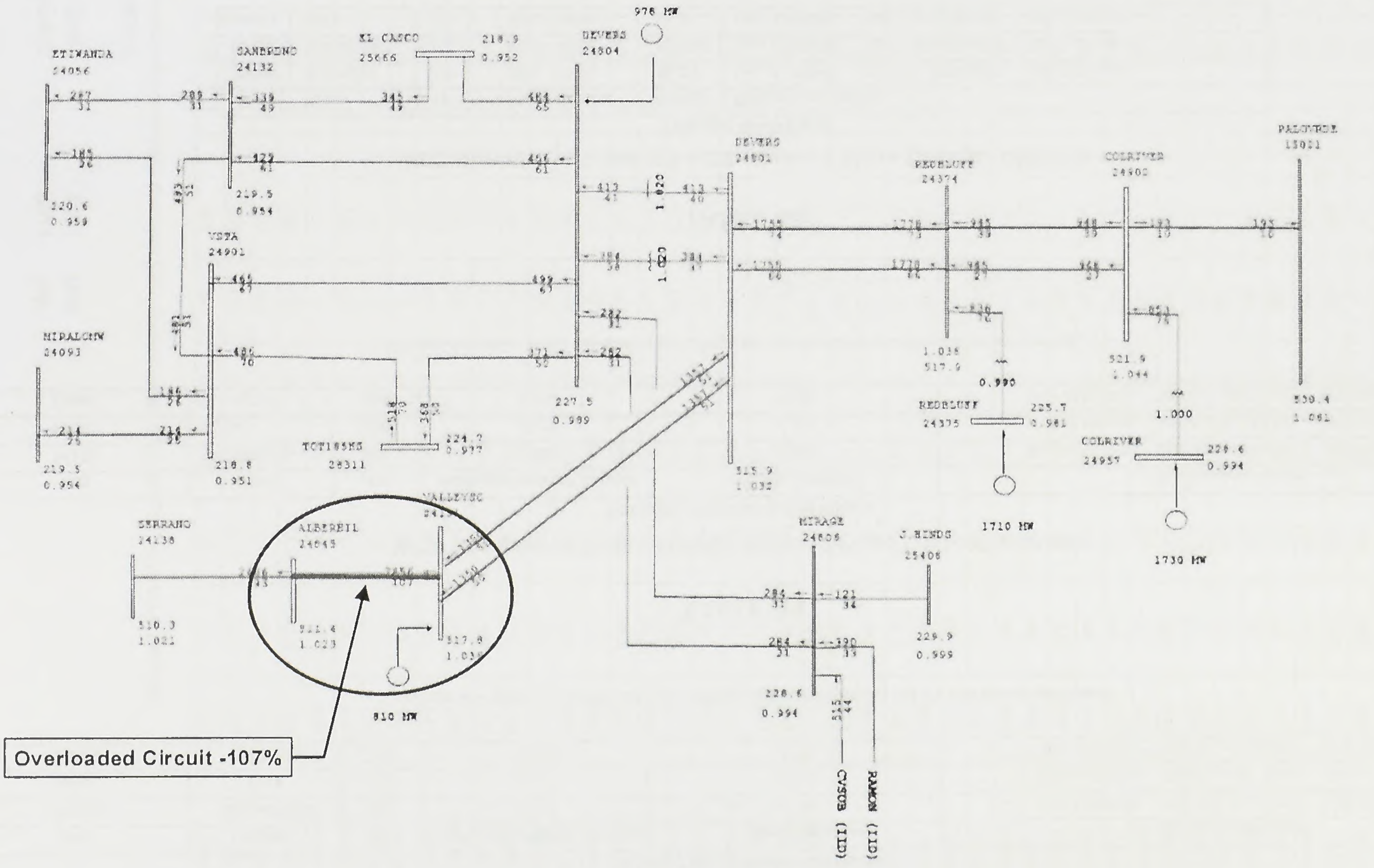
Facility									Loading				
From	Name	kV	To	Name	kV	ck	Rated Amps	Worst Outage	%	MW	MVAR	AMPS	Worst Outage description
24804	DEVERS	230	25666	EL CASCO	230	1	2037	line_237	95.8%	732	177	1949	ALBERHII 500.0 to SERRANO 500.0 #1
24804	DEVERS	230	24901	VSTA	230	2	2037	line_237	**100.7%**		191	2051	ALBERHII 500.0 to SERRANO 500.0 #1
25666	EL CASCO	230	24132	SANBRDNO	230	1	2037	line_237	79.6%	560	-94	1621	ALBERHII 500.0 to SERRANO 500.0 #1
24132	SANBRDNO	230	24804	DEVERS	230	1	2037	line_237	92.6%	-637	191	1885	ALBERHII 500.0 to SERRANO 500.0 #1
28311	TOT185HS	230	24804	DEVERS	230	1	2037	line_237	84.4%	-629	-134	1720	ALBERHII 500.0 to SERRANO 500.0 #1
28311	TOT185HS	230	24901	VSTA	230	1	2037	line_237	**103.8%**	779	135	2114	ALBERHII 500.0 to SERRANO 500.0 #1

WOD Upgrades with Drake 795 ACCR conductor--Cluster 7 Phase I, 1400 MW IID-ISO export
Double Contingency N-2 and N-1-1 (Category C)

Facility									Loading				
From	Name	kV	To	Name	kV	ck	Rated Amps	Worst Outage	%	MW	MVAR	AMPS	Worst Outage description
24804	DEVERS	230	25666	EL CASCO	230	1	2037	line_202309	**120.9%**	902	288	2461	SANBRDNO 230.0 to DEVERS 230.0 #1 ALBERHIL 500.0 to SERRANO 500 #1
24804	DEVERS	230	24901	VSTA	230	2	2037	line_202841	**119.3%**	897	277	2431	ALBERHIL 500.0 to SERRANO 500.0 #1 TOT185HS 230 to DEVERS 230 #1
25666	EL CASCO	230	24132	SANBRDNO	230	1	2037	line_202309	**104.2%**	697	-145	2122	SANBRDNO 230.0 to DEVERS 230.0 #1 ALBERHIL 500.0 to SERRANO 500 #1
24132	SANBRDNO	230	24804	DEVERS	230	1	2037	line_202851	**114.1%**	-752	297	2323	ALBERHIL 500.0 to SERRANO 500.0 #1 EL CASCO 230.0 to SANBRDNO 230 #1
28311	TOT185HS	230	24804	DEVERS	230	1	2037	line_202309	**102.1%**	-737	-204	2080	SANBRDNO 230.0 to DEVERS 230.0 #1 ALBERHIL 500.0 to SERRANO 500 #1
28311	TOT185HS	230	24901	VSTA	230	1	2037	line_202309	**121.7%**	887	209	2479	SANBRDNO 230.0 to DEVERS 230.0 #1 ALBERHIL 500.0 to SERRANO 500 #1

CASE #6--ISO Cluster 7 Phase I + IID-ISO 1400 MW + Alternate Conductor

Normal Conditions



Overloaded Circuit -107%

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2014 SCE ATRA BASE CASE
STUDY SCENARIO: Peak
CASE NAME: 19-p-main

DATE: 03/18/2014
WECC SEED: 19HS2 Published 9/10/2013

MW/% rate
C7PhI+IID1400+AltCond
Rating = 1

TABLE B4

Proposed Project - Cluster 7 Phase 1, IID-ISO 1400 MW

Voltage deviation violations*

Bus	Name	kV	Voltage deviation criteria	Voltage deviation	Outage description
24132	SANBRDNO	230	≤ 5%	-6.7%	Line AL8ERHIL 500.0 to VALLEY5C 500.0 Circuit 1
24901	VSTA	230	≤ 5%	-6.4%	Line AL8ERHIL 500.0 to VALLEY5C 500.0 Circuit 1
25666	EL CASCO	230	≤ 5%	-6.5%	Line AL8ERHIL 500.0 to VALLEYSC 500.0 Circuit 1

* Voltage deviation is the difference in voltage at a particular bus before and after contingency

TABLE B5

WOD Upgrades w/Drake 795 ACCR--Cluster 7 Phase 1, IID-ISO 1400 MW

Voltage deviation violations*

Bus	Name	kV	Voltage deviation criteria	Voltage deviation	Outage description
24132	SAN8RDNO	230	≤ 5%	-6.8%	Line ALBERHIL 500.0 to SERRANO 500.0 Circuit 1
24901	V5TA	230	≤ 5%	-6.5%	Line ALBERHIL 500.0 to SERRANO 500.0 Circuit 1
25666	EL CASCO	230	≤ 5%	-7.2%	Line ALBERHIL 500.0 to SERRANO 500.0 Circuit 1

* Voltage deviation is the difference in voltage at a particular bus before and after contingency

TABLE B6

WOD Upgrades w/Drake 795 ACCR--Cluster 7 Phase 1, IID-ISO 1400 MW

Voltage violations

Bus	Name	kV	Voltage Criteria	Voltage	Outage description
25666	EL CASCO	230	90% - 110%	88.0%	Line AL8ERHIL 500.0 to SERRANO 500.0 Circuit 1
24132	5ANBRDNO	230	90% - 110%	88.6%	Line AL8ERHIL 500.0 to SERRANO 500.0 Circuit 1
24901	V5TA	230	90% - 110%	88.6%	Line AL8ERHIL 500.0 to SERRANO 500.0 Circuit 1

TABLE B7
CAISO Queue Cluster 7 Phase I, 2019 Summer Peak Base case
Generation modeled in Colorado River, Red Bluff and Devers area

BUS-NO	NAME	KV	ID	ST	PGEN	PMAX	PMIN	QGEN	QMAX	QMIN	ZONE	Major Point of Interconnection
24999	DEVRSVC1	500	1	1	0	0	0	100	100	-100	940	Devers 230 kV Sub
29041	IEEC-G1	19.5	1	1	405	405	203	220.4	280	-200	940	Valley 500 kV Sub
29042	IEEC-G2	19.5	2	1	405	405	203	220.4	280	-200	940	Valley 500 kV Sub
24921	MNTV-CT1	18	1	1	164	185	0	56	115	-61	940	MNTVIEW 230 kV Sub
24922	MNTV-CT2	18	1	1	164	185	0	56	115	-61	940	MNTVIEW 230 kV Sub
24924	MNTV-CT3	18	1	1	164	185	0	55.8	115	-61	940	MNTVIEW 230 kV Sub
24925	MNTV-CT4	18	1	1	164	185	0	55.8	115	-61	940	MNTVIEW 230 kV Sub
24923	MNTV-ST1	18	1	0	208	321	0	53.2	200	-100	940	MNTVIEW 230 kV Sub
24926	MNTV-ST2	18	1	0	208	321	0	53.6	200	-100	940	MNTVIEW 230 kV Sub
29101	TOT032G1	13.8	1	1	91	107	0	45.2	56	-44	940	Devers 230 kV Sub
29102	TOT032G2	13.8	1	1	91	107	0	45.2	56	-44	940	Devers 230 kV Sub
29103	TOT032G3	13.8	1	1	91	107	0	38.3	56	-44	940	Devers 230 kV Sub
29104	TOT032G4	13.8	1	1	91	107	0	38.3	56	-44	940	Devers 230 kV Sub
29105	TOT032G5	13.8	1	1	91	107	0	38.3	56	-44	940	Devers 230 kV Sub
29106	TOT032G6	13.8	1	1	91	107	0	31.4	56	-44	940	Devers 230 kV Sub
29107	TOT032G7	13.8	1	1	91	107	0	31.4	56	-44	940	Devers 230 kV Sub
29108	TOT032G8	13.8	1	1	91	107	0	45.2	56	-44	940	Devers 230 kV Sub
28313	TOT185GN	1	1	1	150	150	0	32.4	55.3	-55.3	248	Devers 230 kV Sub
24963	TOT198G1	0.32	1	1	226	129.8	0	57	84	-84	943	Red Bluff 230 kV Sub
24965	TOT198G2	0.32	1	1	22.7	129.8	0	11	11	-11	943	Red Bluff 230 kV Sub
24964	TOT199G1	0.32	1	1	233.1	156.9	0	47.7	86	-86	943	Red Bluff 230 kV Sub
24966	TOT199G2	0.32	1	1	80	156.9	0	40.3	86.8	0	943	Red Bluff 230 kV Sub
24976	TOT223_G	0.34	1	1	250	250	0	42	150	0	944	Colorado River 230 kV Sub
24977	TOT223L1	13.8	1	1	125	140	0	20.7	87.3	0	944	Colorado River 230 kV Sub
24978	TOT223L2	13.8	1	1	125	140	0	21.4	87.3	0	944	Colorado River 230 kV Sub
24982	TOT276G1	0.34	1	1	125	125	0	38.1	60.5	-60.5	944	Colorado River 230 kV Sub
24983	TOT276G2	0.34	2	1	125	125	0	38.1	60.5	-60.5	944	Colorado River 230 kV Sub
24984	TOT276G3	0.34	3	1	125	125	0	38.2	60.5	-60.5	944	Colorado River 230 kV Sub
24985	TOT276G4	0.34	4	1	110	110	0	35.5	53.3	-53.3	944	Colorado River 230 kV Sub
94465	TOT321L1	21	1	1	250	171	0	52	130	-43.3	943	Red Bluff 230 kV Sub
94466	TOT321L2	21	1	1	250	171	0	52	130	-43.3	943	Red Bluff 230 kV Sub
95330	TOT446G1	0.26	EQ	1	100	161.5	0	12.3	56	-100	248	Colorado River 230 kV Sub
95331	TOT446G2	0.26	EQ	1	124	161.5	0	13.3	56	-100	248	Colorado River 230 kV Sub
95332	TOT446G3	0.26	EQ	0	162	162	0	0	54.5	-100	248	Colorado River 230 kV Sub
95315	TOT453L	0.31	1	1	250	245	0	49.5	58.8	-100	943	Red Bluff 230 kV Sub
95426	TOT486L1	0.26	1	1	75	75	0	34.9	37	-37	943	Red Bluff 230 kV Sub
95427	TOT486L2	0.26	2	1	73	75	0	34.5	37	-37	943	Red Bluff 230 kV Sub
95829	TOT528G1	0.27	1	1	216	216	0	0	0	0	248	Colorado River 230 kV Sub
95830	TOT528G2	0.27	1	1	5	5	0	0	0	0	248	Colorado River 230 kV Sub
96416	TOT670_G	0.32	1	1	150	150	0	-6.7	61.3	-61.3	248	Colorado River 230 kV Sub
96713	TOT708G	0.39	1	1	250	250	0	-37	37	-37	943	Red Bluff 230 kV Sub
96717	TOT721_G	0.32	1	1	150	150	0	-7.4	61.3	-61.3	248	Colorado River 230 kV Sub
96721	TOT725G	0.36	1	1	100	100	0	-37	37	-37	943	Devers 230 kV Sub

Note: Only on-line Generation is counted in the total (Generation with "0" in the "ST" column is off-line).
578 MW generation is off-line.

Total Generation On-line:	5884	MW
Total Generation Capacity:	6075	MW

TABLE B8

Summer Off-Peak case--Cluster 7 Phase 1 - Normal Operating conditions (Category A)

Facility									Loading				
From	Name	kV	To	Name	kV	ck	Rated Amps	Outage	%	MW	MVAR	AMPS	Outage Description
24845	**ALBERHIL**	**500**	**24151**	**VALLEYSC**	**500**	**1**	**3000**	**base**	**102.8%**	**-2754**	**53**	**3084**	**Base system (n-0)**
24804	DEVERS	230	25666	EL CASCO	230	1	3231	base	38.0%	477	37	1228	Base system (n-0)
24804	DEVERS	230	24901	VSTA	230	2	3231	base	36.0%	574	69	1485	Base system (n-0)
24805	**DEVERS**	**115**	**24804**	**DEVERS**	**230**	**1**	**280**	**base**	**116.3%**	**275**	**-111**	**1494**	**Base system (n-0)**
24805	**DEVERS**	**115**	**24804**	**DEVERS**	**230**	**3**	**280**	**base**	**111.2%**	**263**	**-106**	**1429**	**Base system (n-0)**
24805	**DEVERS**	**115**	**24804**	**DEVERS**	**230**	**4**	**280**	**base**	**109.4%**	**259**	**-104**	**1406**	**Base system (n-0)**
25666	EL CASCO	230	24132	SANBRDNO	230	1	3231	base	34.8%	432	-22	1123	Base system (n-0)
24132	SANBRDNO	230	24804	DEVERS	230	1	3231	base	47.8%	-521	60	1364	Base system (n-0)
28311	TOT18SHS	230	24804	DEVERS	230	1	3231	base	36.0%	-446	-64	1164	Base system (n-0)
28311	TOT18SHS	230	24901	VSTA	230	1	3231	base	47.8%	596	60	1545	Base system (n-0)

Summer Off-Peak case - Cluster 7 Phase 1 - Single contingency conditions (Category B)

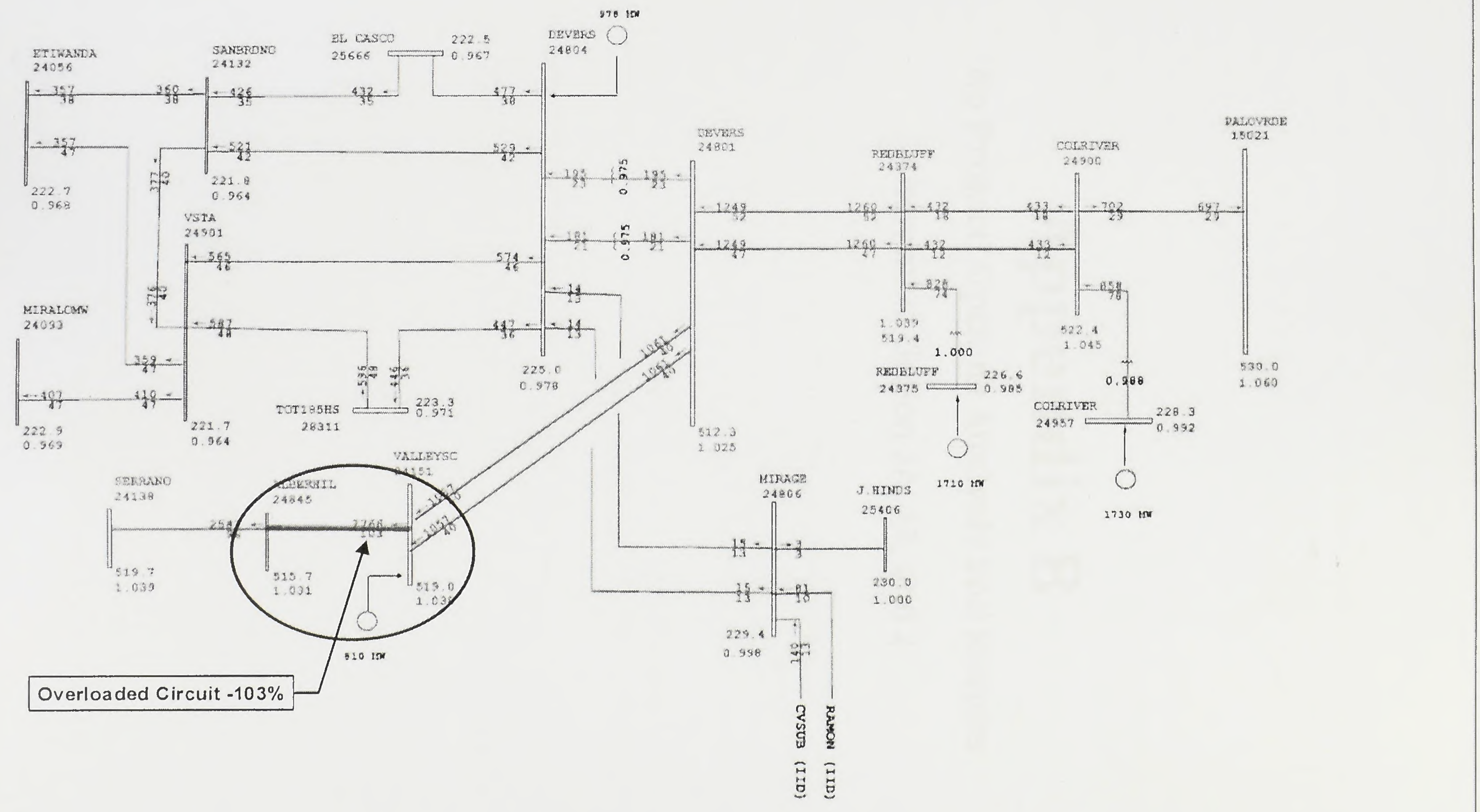
Facility									Loading				
From	Name	kV	To	Name	kV	ck	Rated Amps	Worst Outage	%	MW	MVAR	AMPS	Worst Outage Description
24804	DEVERS	230	25666	EL CASCO	230	1	4360	line_238	45.5%	730	146	1981	Line ALBERHIL 500.0 to VALLEYSC 500.0 Circuit 1
24804	DEVERS	230	24901	VSTA	230	2	4360	line_238	56.4%	899	215	2459	Line ALBERHIL 500.0 to VALLEYSC 500.0 Circuit 1
25666	EL CASCO	230	24132	SANBRDNO	230	1	4360	line_238	42.9%	679	-19	1871	Line ALBERHIL 500.0 to VALLEYSC 500.0 Circuit 1
24132	SANBRDNO	230	24804	DEVERS	230	1	4360	line_238	51.2%	-797	150	2234	Line ALBERHIL 500.0 to VALLEYSC 500.0 Circuit 1
28311	TOT18SHS	230	24804	DEVERS	230	1	4360	line_238	48.6%	-768	-153	2121	Line ALBERHIL 500.0 to VALLEYSC 500.0 Circuit 1
28311	TOT18SHS	230	24901	VSTA	230	1	4360	line_238	57.9%	918	159	2524	Line ALBERHIL 500.0 to VALLEYSC 500.0 Circuit 1

Summer Off-Peak case - Cluster 7 Phase 1 - Double contingency conditions (Category C)

Facility									Loading				
From	Name	kV	To	Name	kV	ck	Rated Amps	Worst Outage	%	MW	MVAR	AMPS	Worst Outage Description
24804	DEVERS	230	25666	EL CASCO	230	1	4360	line_202310	59.9%	944	245	2609	Line SANBRDNO 230.0 to DEVERS 230.0 Circuit 1, Line ALBERHIL 500.0 to VALLEYSC 500 Circuit 1
24804	DEVERS	230	24901	VSTA	230	2	4360	line_202869	71.8%	1116	342	3131	Line ALBERHIL 500.0 to VALLEYSC 500.0 Circuit 1, Line TOT18SHS 230 to VSTA 230 Circuit 1
25666	EL CASCO	230	24132	SANBRDNO	230	1	4360	line_202310	57.3%	885	-46	2497	Line SANBRDNO 230.0 to DEVERS 230.0 Circuit 1, Line ALBERHIL 500.0 to VALLEYSC 500 Circuit 1
24132	SANBRDNO	230	24804	DEVERS	230	1	4360	line_202807	65.4%	-991	279	2853	Line DEVERS 230.0 to EL CASCO 230.0 Circuit 1, Line ALBERHIL 500.0 to VALLEYSC 500 Circuit 1
28311	TOT18SHS	230	24804	DEVERS	230	1	4360	line_202778	63.6%	-977	-241	2775	Line DEVERS 230.0 to VSTA 230.0 Circuit 2, Line ALBERHIL 500.0 to VALLEYSC 500 Circuit 1
28311	TOT18SHS	230	24901	VSTA	230	1	4360	line_202778	72.9%	1127	245	3181	Line DEVERS 230.0 to VSTA 230.0 Circuit 2, Line ALBERHIL 500.0 to VALLEYSC 500 Circuit 1

CASE #7--ISO Cluster 7 Phase I (2019) case Off-Peak

Normal Conditions



Overloaded Circuit -103%

General Electric International, Inc.   PSLF Program   Tue May 05 04:53:20 2015   cases\C7PI19OP.sav

	2014 SCE ATRA BASE CASE STUDY SCENARIO: 2019 Light Load CASE NAME: 19-LL-main	DATE: 03/18/2014 WECC SEED: 19HW2 Published 10/7/2013	MW/% rate C:\AspenWOD\SBTOOLSVS Rating = 1

Appendix B

"No Project" Options Analysis and Results

Alternative Option 1A, 1B, and 2

Additional Alternatives Assessed

Following the analysis and assessment of the proposed Project and ***Phased Build*** alternative, at the request of ASPEN and the CPUC, ZGlobal conducted additional Normal and Single contingency analysis for "No Project" alternatives identified and defined as follows:

Transmission System Alternative: "No Project" Options

"No Project" Option #1 would remove all the 220 kV lines interconnecting Devers to El Casco; Devers to Vista; and Devers to San Bernardino; and would retain all the portions between El Casco and San Bernardino, and into Vista. Option #1 is subdivided into two sub-configurations:

Option #1A: Add a new 500 kV circuit with bundled 2156 kcmil ACSR conductor (2B-2156) between Devers and a new substation located in the city of Beaumont (Beaumont 500/220 kV Station) between Devers and El Casco. Loop-in one of the existing Devers-Valley 500 kV circuits into the new Beaumont Substation. Add four (4) new 220 kV circuits emanating from Beaumont; one to El Casco, one to San Bernardino, and two to Vista using 2B-1590 ACSR conductors as proposed.

Option #1B: In lieu of adding a new 500 kV circuit between Devers and Beaumont, loop in the two existing Devers-Valley 500 kV circuits into Beaumont and similar to Option #1A, add four (4) new 220 kV circuits emanating from Beaumont; one to El Casco, one to San Bernardino, and two to Vista using 2B-1590 ACSR conductors as proposed.

"No Project" Option #2: Retain the existing 220 kV circuits and configuration from Devers to El Casco, San Bernardino and Vista. Add a new, 2nd 500 kV, 2B-2156 circuit from Valley to Serrano.

Figure B1A displays the single-line diagram or power flow plot for the Option #1A circuit arrangement and power flow conditions under Normal conditions using the same 2024 Peak Summer Reliability base case used in assessing the proposed Project and ***Phased Build*** alternative.

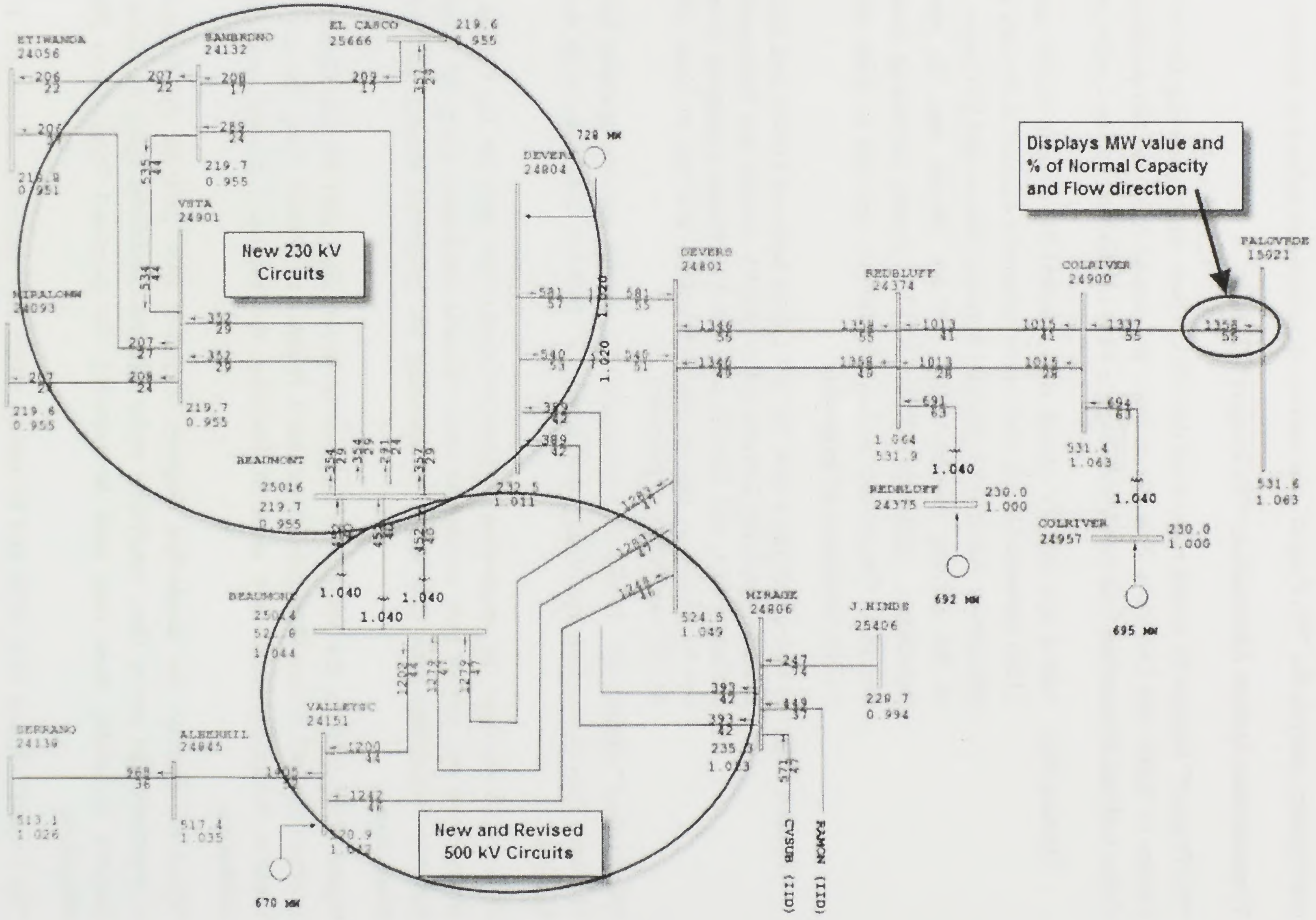
Figure B1B displays the single-line diagram or power flow plot for the Option #1B circuit arrangement and power flow conditions under Normal conditions using the same 2024 Peak Summer Reliability base case used in assessing the proposed Project and ***Phased Build*** alternative.

Figure B2 displays the single-line diagram or power flow plot for the Option #2 circuit arrangement and power flow conditions under Normal conditions using the same 2024 Peak Summer Reliability base case used in assessing the proposed Project and ***Phased Build*** alternative.

"No Project" Option #1A, #1B, and #2 results tables and summaries follow the Figures B1A, B1B, and B2. Refer to Appendix C for complete list of applicable Power Flow plots.

Figure B1A – Option #1A Power Flow Plot

Option1A-ISO 2024 Summer Peak Reliability Base Case with Beaumont 230/500kV Subst



Displays MW value and % of Normal Capacity and Flow direction

New 230 kV Circuits

New and Revised 500 kV Circuits

Figure B1B – Option #1B Power Flow Plot

Option1B-ISO 2024 Summer Peak Reliability Base Case with Beaumont 230/500kV Subst

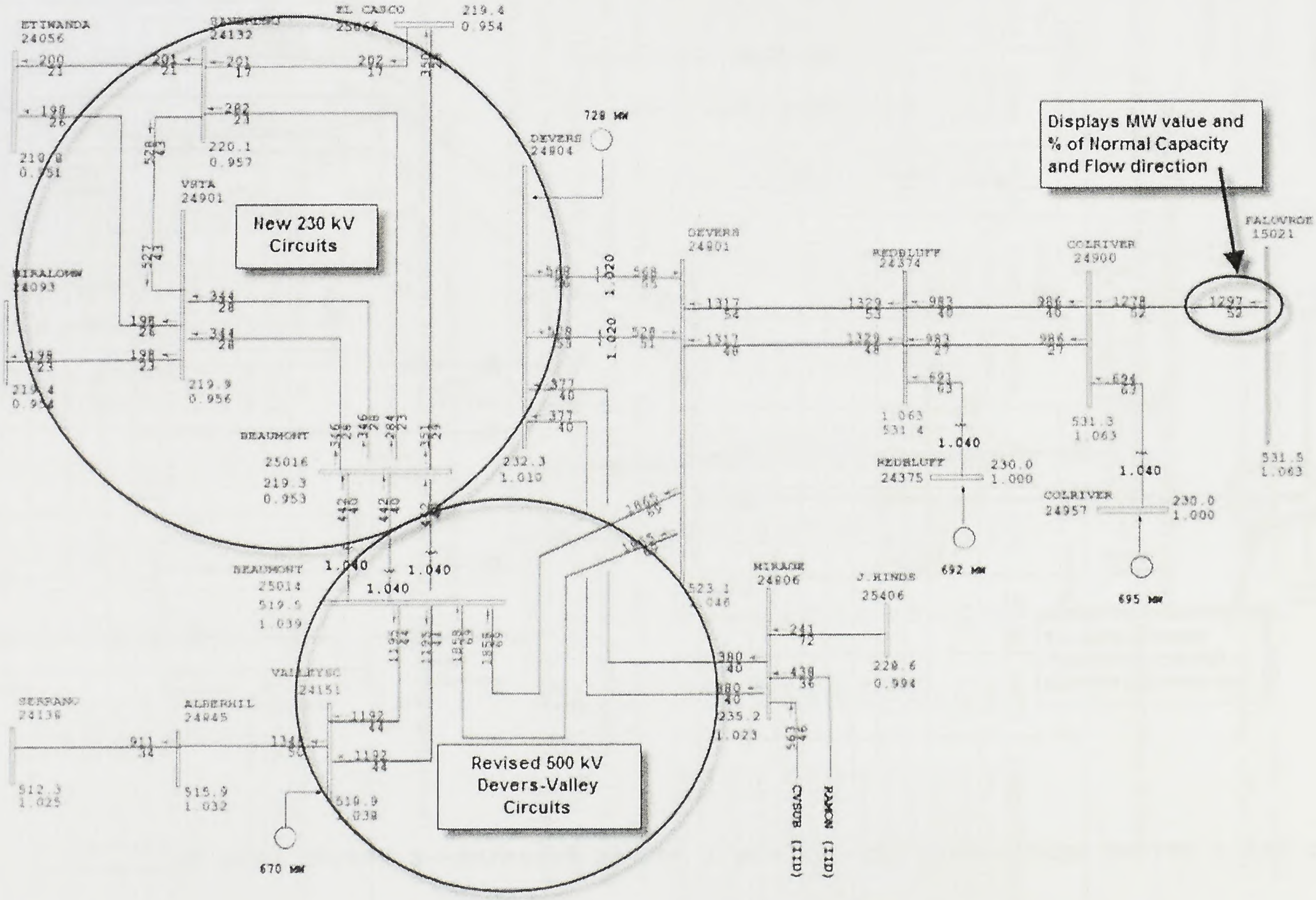
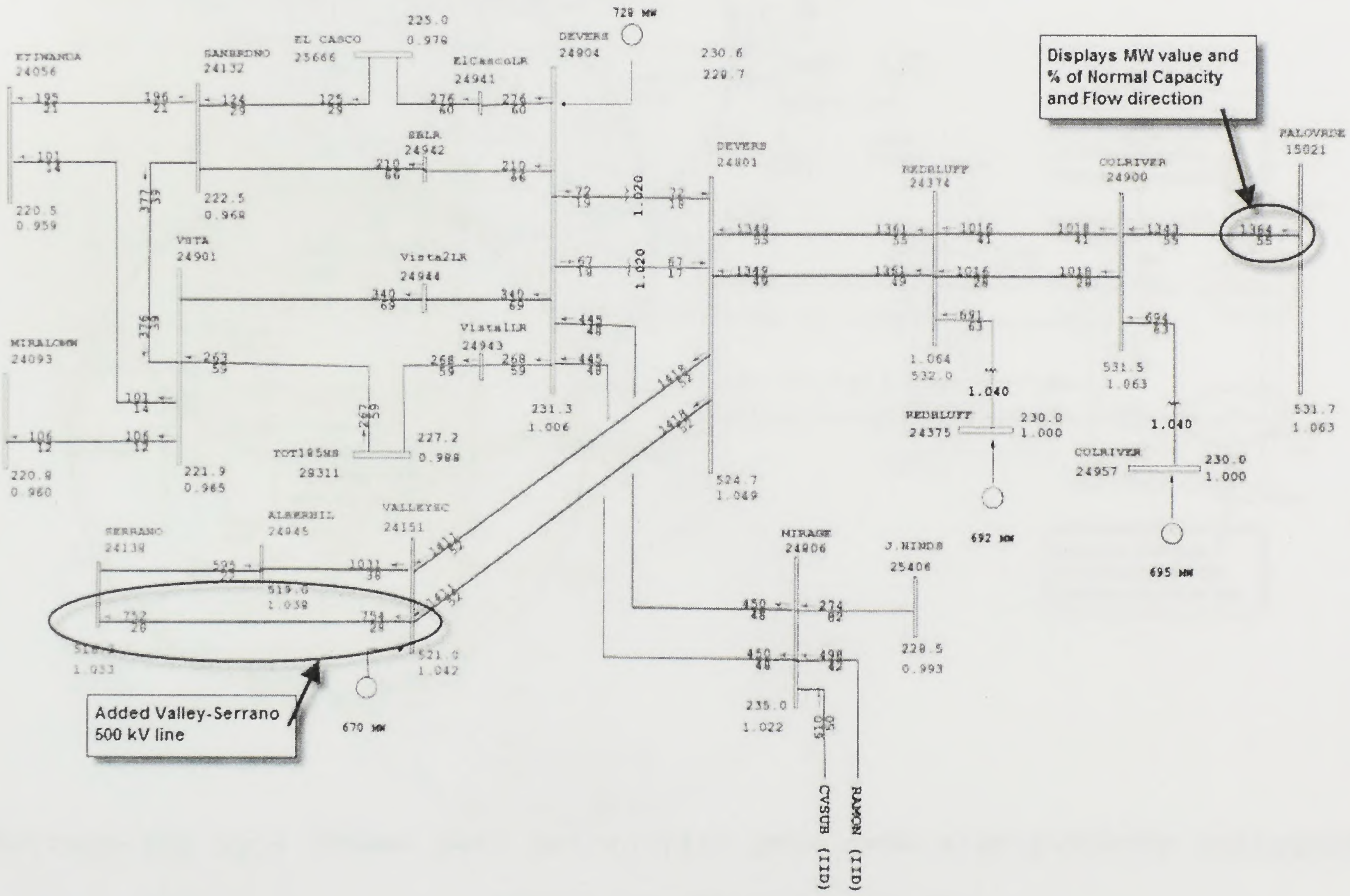


Figure B2 – Option #2 Power Flow Plot

No Proj Option 2--Existing System + New VAL-SER line--ISO24 Reliab + IID-ISO 1400 MW



Displays MW value and % of Normal Capacity and Flow direction

Added Valley-Serrano 500 kV line

Option #1A Results

Option 1A provided very positive results. Both the ISO 2024 Reliability case with IID to ISO export of 1400 MW and Cluster 7 Phase I with IID to ISO export of 1400 MW were evaluated.

A. **ISO 2024 Reliability case:**

1. No overloaded facilities were found in the study area (West of Devers) under normal operating conditions. All transformers and transmission lines were operating within their normal ratings.

Option 1A--ISO24Reliability + IID - ISO 1400 MW export

New 500 kV Devers - Beaumont line, loop DV #1 into Beaumont, four new 230 kV Beaumont West circuits

Normal Operating conditions

Facility									Loading				
From Bus #	Name	kV	To Bus #	Name	kV	ck	Rated Amps	Outage	%	MW	MVAR	AMPS	Outage Description
24845	ALBERHIL	500	24138	SERRANO	500	1	3000	base	36.4%	968	97	1086	Base system (n-0)
24845	ALBERHIL	500	24151	VALLEYSC	500	1	3000	base	52.3%	-1402	-116	1570	Base system (n-0)
25014	BEAUMONT	500	24151	VALLEYSC	500	1	3000	base	44.3%	1202	6	1330	Base system (n-0)
24801	DEVERS	500	25014	BEAUMONT	500	1	3000	base	47.2%	1283	61	1413	Base system (n-0)
24801	DEVERS	500	25014	BEAUMONT	500	2	3000	base	47.2%	1283	61	1413	Base system (n-0)
25014	BEAUMONT	500	25016	BEAUMONT	230	1	1120 MVA	base	40.4%	452	19	501	Base system (n-0)
25014	BEAUMONT	500	25016	BEAUMONT	230	2	1120 MVA	base	40.4%	452	19	501	Base system (n-0)
25014	BEAUMONT	500	25016	BEAUMONT	230	3	1120 MVA	base	40.4%	452	19	501	Base system (n-0)
25016	BEAUMONT	230	25666	EL CASCO	230	1	3231	base	29.1%	357	-10	940	Base system (n-0)
25016	BEAUMONT	230	24132	SANBRDNO	230	1	3231	base	23.7%	291	-10	764	Base system (n-0)
25016	BEAUMONT	230	24901	VSTA	230	1	3231	base	28.8%	354	-8	931	Base system (n-0)
25016	BEAUMONT	230	24901	VSTA	230	2	3231	base	28.8%	354	-8	931	Base system (n-0)
25666	EL CASCO	230	24132	SANBRDNO	230	1	3231	base	17.1%	209	-25	554	Base system (n-0)

2. No overloaded facilities were found in the study area under Single contingency conditions. About 80 contingencies identified in the ISO-posted contingency file were evaluated. The highest loading was ~75% on the Beaumont–Valley 500 kV line when Devers–Valley #2 was taken out of service. This indicates there is about 25% of unused capacity to accommodate future generation and load growth.

Option 1A--ISO24Reliability + IID - ISO 1400 MW export

New 500 kV Devers - Beaumont line, loop DV #1 into Beaumont, four new 230 kV Beaumont West circuits

Single Contingency conditions

Facility									Loading				
From Bus#	Name	kV	To Bus#	Name	kV	ck	Rated Amps	Worst Outage	%	MW	MVAR	AMPS	Worst Outage Description
24845	ALBERHIL	500	24138	SERRANO	500	1	4800	line_55	26.0%	1106	99	1243	MIRALOMA - SERRANO 500 kV Ckt 2
24845	ALBERHIL	500	24151	VALLEYSC	500	1	4800	line_55	36.0%	-1539	-118	1729	MIRALOMA - SERRANO 500 kV Ckt 2
25014	BEAUMONT	500	24151	VALLEYSC	500	1	3300	line_44	75.3%	2223	36	2484	DEVERS - VALLEYSC 500 kV Ckt 2
24801	DEVERS	500	25014	BEAUMONT	500	1	3300	line_1401	71.6%	2130	164	2360	DEVERS - BEAUMONT 500 kV Ckt 2
24801	DEVERS	500	25014	BEAUMONT	500	2	3300	line_1400	71.6%	2130	164	2360	DEVERS - BEAUMONT 500 kV Ckt 1
24801	DEVERS	500	24151	VALLEYSC	500	2	3300	line_1402	69.7%	2074	189	2300	BEAUMONT - VALLEYSC 500 kV Ckt 1
25014	BEAUMONT	500	25016	BEAUMONT	230	1	1680 MVA	line_36	44.2%	733	125	817	ALBERHIL - VALLEYSC 500 kV Ckt 1
25014	BEAUMONT	500	25016	BEAUMONT	230	2	1680 MVA	line_36	44.2%	733	125	817	ALBERHIL - VALLEYSC 500 kV Ckt 1
25014	BEAUMONT	500	25016	BEAUMONT	230	3	1680 MVA	line_36	44.2%	733	125	817	ALBERHIL - VALLEYSC 500 kV Ckt 1
25016	BEAUMONT	230	25666	EL CASCO	230	1	4360	line_36	32.7%	539	19	1425	ALBERHIL - VALLEYSC 500 kV Ckt 1
25016	BEAUMONT	230	24132	SANBRDNO	230	1	4360	line_36	30.2%	497	30	1316	ALBERHIL - VALLEYSC 500 kV Ckt 1
25016	BEAUMONT	230	24901	VSTA	230	1	4360	line_36	35.3%	581	39	1538	ALBERHIL - VALLEYSC 500 kV Ckt 1
25016	BEAUMONT	230	24901	VSTA	230	2	4360	line_36	35.3%	581	39	1538	ALBERHIL - VALLEYSC 500 kV Ckt 1
25666	EL CASCO	230	24132	SANBRDNO	230	1	4360	line_36	23.7%	390	-11	1034	ALBERHIL - VALLEYSC 500 kV Ckt 1

B. ISO Cluster 7 Phase I 2019 case:

1. No overloaded facilities were found in the study area (West of Devers) under Normal operating conditions. All transformers and transmission lines were operating within their normal ratings. One key observation here is that Alberhill–Valley 500 kV line is loaded to 98.8%. This line was previously overloaded (103%) in the SCE proposed Project scenario.

Option 1A–Cluster 7 Phase I + IID - ISO 1400 MW export
New 500 kV Devers - Beaumont line, loop DV #1 into Beaumont, four new 230 kV Beaumont West circuits
Normal Operating conditions

Facility									Loading				
From Bus #	Name	kV	To Bus #	Name	kV	ck	Rated Amps	Outage	%	MW	MVAR	AMPS	Outage Description
24845	ALBERHIL	500	24138	SERRANO	500	1	3000	base	84.6%	2245	45	2537	Base system (n-0)
24845	ALBERHIL	500	24151	VALLEYSC	500	1	3000	base	98.8%	-2623	-64	2965	Base system (n-0)
25014	BEAUMONT	500	24151	VALLEYSC	500	1	3000	base	41.7%	1091	-214	1252	Base system (n-0)
24801	DEVERS	500	25014	BEAUMONT	500	1	3000	base	60.4%	1613	20	1813	Base system (n-0)
24801	DEVERS	500	25014	BEAUMONT	500	2	3000	base	60.4%	1613	20	1813	Base system (n-0)
24801	DEVERS	500	24151	VALLEYSC	500	2	3000	base	52.3%	1396	-62	1570	Base system (n-0)
25014	BEAUMONT	500	25016	BEAUMONT	230	1	1120 MVA	base	63.4%	708	27	798	Base system (n-0)
25014	BEAUMONT	500	25016	BEAUMONT	230	2	1120 MVA	base	63.4%	708	27	798	Base system (n-0)
25014	BEAUMONT	500	25016	BEAUMONT	230	3	1120 MVA	base	63.4%	708	27	798	Base system (n-0)
25016	BEAUMONT	230	25666	EL CASCO	230	1	3231	base	36.8%	442	-50	1188	Base system (n-0)
25016	BEAUMONT	230	24132	SANBRDNO	230	1	3231	base	39.1%	470	-52	1262	Base system (n-0)
25016	BEAUMONT	230	24901	VSTA	230	1	3231	base	50.1%	606	-27	1618	Base system (n-0)
25016	BEAUMONT	230	24901	VSTA	230	2	3231	base	50.1%	606	-27	1618	Base system (n-0)
25666	EL CASCO	230	24132	SANBRDNO	230	1	3231	base	27.3%	324	-70	881	Base system (n-0)

2. No overloaded facilities were found in the study area under Single contingency conditions. About 200 contingencies were evaluated. This larger number of contingencies was identified in the ISO-posted contingency file used for the Cluster 7 interconnection study. The Alberhill–Valley loading of 98.8% actually went down to 65% under the worst Single contingency condition (outage of the Beaumont–Vista line). The highest loading was 91% on Devers-Beaumont line when the second Devers–Beaumont line was taken out of service.

Option 1A--Cluster 7 Phase I + IID - ISO 1400 MW export
New 500 kV Devers - Beaumont line, loop DV #1 into Beaumont, four new 230 kV Beaumont West circuits
Single Contingency conditions

Facility									Loading				
From Bus #	Name	kV	To Bus #	Name	kV	ck	Rated Amps	Worst Outage	%	MW	MVAR	AMPS	Worst Outage Description
24845	ALBERHIL	500	24138	SERRANO	500	1	4800	line_1405	56.3%	2383	54	2702	BEAUMONT - VSTA 230 kV Ckt 1
24845	ALBERHIL	500	24151	VALLEYSC	500	1	4800	line_1405	65.2%	-2761	-73	3131	BEAUMONT - VSTA 230 kV Ckt 1
25014	BEAUMONT	500	25016	BEAUMONT	230	1	1680 MVA	line_238	72.2%	1170	320	1388	ALBERHIL 500.0 to VALLEYSC 500.0 Circuit 1
25014	BEAUMONT	500	25016	BEAUMONT	230	2	1680 MVA	line_238	72.2%	1170	320	1388	ALBERHIL 500.0 to VALLEYSC 500.0 Circuit 1
25014	BEAUMONT	500	25016	BEAUMONT	230	3	1680 MVA	line_238	72.2%	1170	320	1388	ALBERHIL 500.0 to VALLEYSC 500.0 Circuit 1
25014	BEAUMONT	500	24151	VALLEYSC	500	1	3300	line_225	77.4%	2219	-324	2554	DEVERS 500.0 to VALLEYSC 500.0 Circuit 2
25016	BEAUMONT	230	25666	EL CASCO	230	1	4360	line_238	44.9%	696	8	1957	ALBERHIL 500.0 to VALLEYSC 500.0 Circuit 1
25016	BEAUMONT	230	24132	SANBRDNO	230	1	4360	line_238	51.6%	800	37	2250	ALBERHIL 500.0 to VALLEYSC 500.0 Circuit 1
25016	BEAUMONT	230	24901	VSTA	230	1	4360	line_238	65.2%	1006	99	2842	ALBERHIL 500.0 to VALLEYSC 500.0 Circuit 1
25016	BEAUMONT	230	24901	VSTA	230	2	4360	line_238	65.2%	1006	99	2842	ALBERHIL 500.0 to VALLEYSC 500.0 Circuit 1
24801	DEVERS	500	25014	BEAUMONT	500	1	3300	line_1401	91.3%	2662	120	3013	DEVERS - BEAUMONT 500 kV Ckt 2
24801	DEVERS	500	25014	BEAUMONT	500	2	3300	line_1400	91.3%	2662	120	3013	DEVERS - BEAUMONT 500 kV Ckt 1
24801	DEVERS	500	24151	VALLEYSC	500	2	3300	line_1402	73.7%	2149	-61	2433	BEAUMONT - VALLEYSC 500 kV Ckt 1
25666	EL CASCO	230	24132	SANBRDNO	230	1	4360	line_238	37.3%	576	-46	1627	ALBERHIL 500.0 to VALLEYSC 500.0 Circuit 1

This scenario satisfies the operational requirements under the highest queued generation level that could be possible (but determined to be improbable) in 2019 and beyond.

Double contingencies were not run for the "No Project" Options; however, expected results would show overloading of facilities for which the common mitigation is to drop generation as well as load if necessary. This mitigation is allowed under NERC planning criteria for double contingencies.

Option #1B Results

A. ISO 2024 Reliability Case

1. Normal Operating Conditions results. No overloaded facilities were found under normal operating conditions in the West of Devers study area. All transformers and transmission lines were operating within their normal ratings. Key observations:
   - a. Four (4) Valley 500/115 kV banks are loaded to 75-78%.
   - b. Two (2) Devers-Beaumont 500 kV lines loaded to 69%.
   - c. Redbluff-Devers No. 1 500 kV line is loaded to 53%.
   - d. Redbluff-Devers No. 2 500 kV line is loaded to 48%.

Option 1B--ISO24Reliability + IID - ISO 1400 MW export

Devers - Valley 500 kV circuits #1 and # 2 loop into Beaumont 500 kV

Normal Operating conditions

Facility									Loading				
From Bus #	Name	kV	To Bus #	Name	kV	ck	Rated Amps	Outage	%	MW	MVAR	AMPS	Outage Description
24845	ALBERHIL	500	24138	SERRANO	500	1	3000	base	34.3%	911	73	1023	Base system (n-0)
24845	ALBERHIL	500	24151	VALLEYSC	500	1	3000	base	50.3%	-1345	-92	1509	Base system (n-0)
25014	BEAUMONT	500	24151	VALLEYSC	500	1	3000	base	44.3%	1195	-11	1328	Base system (n-0)
25014	BEAUMONT	500	24151	VALLEYSC	500	2	3000	base	44.3%	1195	-11	1328	Base system (n-0)
24801	DEVERS	500	25014	BEAUMONT	500	1	3000	base	68.8%	1865	119	2063	Base system (n-0)
24801	DEVERS	500	25014	BEAUMONT	500	2	3000	base	68.8%	1865	119	2063	Base system (n-0)
25014	BEAUMONT	500	25016	BEAUMONT	230	1	1120 MVA	base	39.5%	442	2	491	Base system (n-0)
25014	BEAUMONT	500	25016	BEAUMONT	230	2	1120 MVA	base	39.5%	442	2	491	Base system (n-0)
25014	BEAUMONT	500	25016	BEAUMONT	230	3	1120 MVA	base	39.5%	442	2	491	Base system (n-0)
25016	BEAUMONT	230	25666	EL CASCO	230	1	3231	base	28.7%	351	-22	926	Base system (n-0)
25016	BEAUMONT	230	24132	SANBRDNO	230	1	3231	base	23.2%	284	-25	750	Base system (n-0)
25016	BEAUMONT	230	24901	VSTA	230	1	3231	base	28.2%	346	-18	912	Base system (n-0)
25016	BEAUMONT	230	24901	VSTA	230	2	3231	base	28.2%	346	-18	912	Base system (n-0)
25666	EL CASCO	230	24132	SANBRDNO	230	1	3231	base	16.8%	202	-37	542	Base system (n-0)

2. Single Contingency Operating Conditions results
   - a. Worst Single Outage Condition. An outage of the Devers–Beaumont 500 kV #1 or #2 line resulted as the worst single contingency (N-1) outage. The remaining circuit will be **Over-loaded** by 18.4% of its emergency rating.
   - b. An outage of any of the four (4) Valley 500/115 kV causes an overload on the remaining transformer banks.

Option 1B--ISO24Reliability + IID - ISO 1400 MW export

Devers - Valley 500 kV circuits #1 and # 2 loop into Beaumont 500 kV

Single Contingency Conditions

Facility								Worst Outage	Loading				Worst Outage description
From Bus #	Name	kV	To Bus #	Name	kV	ck	Rated Amps		%	MW	MVAR	AMPS	
24845	ALBERHIL	500	24138	SERRANO	500	1	4800	line_55	24.8%	1055	75	1188	MIRALOMA - SERRANO 500 kV Ckt 2
24845	ALBERHIL	500	24151	VALLEYSC	500	1	4800	line_55	34.9%	-1488	-95	1676	MIRALOMA - SERRANO 500 kV Ckt 2
25014	BEAUMONT	500	24151	VALLEYSC	500	1	3300	line_1402a	75.2%	2223	42	2481	BEAUMONT - VALLEYSC 500 kV Ckt 2
25014	BEAUMONT	500	24151	VALLEYSC	500	2	3300	line_1402	75.2%	2223	42	2481	BEAUMONT - VALLEYSC 500 kV Ckt 1
24801	DEVERS	500	25014	BEAUMONT	500	1	3300	line_1401	**118.4%**	3492	410	3906	DEVERS - BEAUMONT 500 kV Ckt 2
24801	DEVERS	500	25014	BEAUMONT	500	2	3300	line_1400	**118.4%**	3492	410	3906	DEVERS - BEAUMONT 500 kV Ckt 1
25014	BEAUMONT	500	25016	BEAUMONT	230	1	1680 MVA	line_36	43.3%	719	106	801	ALBERHIL - VALLEYSC 500 kV Ckt 1
25014	BEAUMONT	500	25016	BEAUMONT	230	2	1680 MVA	line_36	43.3%	719	106	801	ALBERHIL - VALLEYSC 500 kV Ckt 1
25014	BEAUMONT	500	25016	BEAUMONT	230	3	1680 MVA	line_36	43.3%	719	106	801	ALBERHIL - VALLEYSC 500 kV Ckt 1
25016	BEAUMONT	230	25666	EL CASCO	230	1	4360	line_36	32.1%	530	7	1401	ALBERHIL - VALLEYSC 500 kV Ckt 1
25016	BEAUMONT	230	24132	SANBRDNO	230	1	4360	line_36	29.6%	488	15	1290	ALBERHIL - VALLEYSC 500 kV Ckt 1
25016	BEAUMONT	230	24901	VSTA	230	1	4360	line_36	34.6%	570	29	1507	ALBERHIL - VALLEYSC 500 kV Ckt 1
25016	BEAUMONT	230	24901	VSTA	230	2	4360	line_36	34.6%	570	29	1507	ALBERHIL - VALLEYSC 500 kV Ckt 1
25666	EL CASCO	230	24132	SANBRDNO	230	1	4360	line_36	23.2%	381	-22	1011	ALBERHIL - VALLEYSC 500 kV Ckt 1

B. Option 1B ISO Cluster 7 Phase I Case

1. Normal operating conditions results. No overloaded facilities were found under normal operating conditions in the West of Devers study area. All transformers and transmission lines were operating within their normal ratings. Key observations:
    a. Alberhill–Valley 500 kV line is loaded to 94%.
    b. (2) Devers-Beaumont 500 kV lines loaded to 85%.
    c. Redbluff-Devers No. 1 500 kV line is loaded to 75%.
    d. Redbluff-Devers No. 2 500 kV line is loaded to 67%.

Option 1B--Cluster 7 Phase I + IID - ISO 1400 MW export

Devers - Valley 500 kV circuits #1 and # 2 loop into Beaumont 500 kV

Normal Operating conditions

Facility								Outage	Loading				Outage Description
From Bus #	Name	kV	To Bus #	Name	kV	ck	Rated Amps		%	MW	MVAR	AMPS	
24845	ALBERHIL	500	24138	SERRANO	500	1	3000	base	79.8%	2118	-7	2393	Base system (n-0)
24845	ALBERHIL	500	24151	VALLEYSC	500	1	3000	base	94.0%	-2496	-12	2820	Base system (n-0)
25014	BEAUMONT	500	24151	VALLEYSC	500	1	3000	base	45.8%	1177	-294	1374	Base system (n-0)
25014	BEAUMONT	500	24151	VALLEYSC	500	2	3000	base	45.8%	1177	-294	1374	Base system (n-0)
24801	DEVERS	500	25014	BEAUMONT	500	1	3000	base	85.2%	2258	49	2556	Base system (n-0)
24801	DEVERS	500	25014	BEAUMONT	500	2	3000	base	85.2%	2258	49	2556	Base system (n-0)
25014	BEAUMONT	500	25016	BEAUMONT	230	1	1120 MVA	base	64.1%	714	78	814	Base system (n-0)
25014	BEAUMONT	500	25016	BEAUMONT	230	2	1120 MVA	base	64.1%	714	78	814	Base system (n-0)
25014	BEAUMONT	500	25016	BEAUMONT	230	3	1120 MVA	base	64.1%	714	78	814	Base system (n-0)
25016	BEAUMONT	230	25666	EL CASCO	230	1	3231	base	36.0%	447	-20	1163	Base system (n-0)
25016	BEAUMONT	230	24132	SANBRDNO	230	1	3231	base	38.1%	473	-12	1231	Base system (n-0)
25016	BEAUMONT	230	24901	VSTA	230	1	3231	base	49.2%	611	19	1590	Base system (n-0)
25016	BEAUMONT	230	24901	VSTA	230	2	3231	base	49.2%	611	19	1590	Base system (n-0)
25666	EL CASCO	230	24132	SANBRDNO	230	1	3231	base	26.6%	328	-39	859	Base system (n-0)

2. Single Contingency operating conditions results.

   a. Worst Single Outage Condition. An outage of the Devers – Beaumont 500 kV #1 or #2 resulted to be the worst single outage. The remaining circuit will be **Over-loaded** by 45.3% of its emergency rating.

Option 1B--Cluster 7 Phase I + IID - ISO 1400 MW export

Devers - Valley 500 kV circuits #1 and # 2 loop into Beaumont 500 kV

Single Contingency conditions

Facility								Worst Outage	Loading				Worst Outage description
From Bus #	Name	kV	To Bus #	Name	kV	ck	Rated Amps		%	MW	MVAR	AMPS	
24845	ALBERHIL	500	24138	SERRANO	500	1	4800	line_1405	53.4%	2262	9	2564	BEAUMONT - VSTA 230 kV Ckt 1
24845	ALBERHIL	500	24151	VALLEYSC	500	1	4800	line_1405	62.3%	-2640	-28	2992	BEAUMONT - VSTA 230 kV Ckt 1
25014	BEAUMONT	500	24151	VALLEYSC	500	1	3300	line_1402b	77.5%	2187	-477	2556	BEAUMONT - VALLEYSC 500 kV Ckt 2
25014	BEAUMONT	500	24151	VALLEYSC	500	2	3300	line_1402	77.5%	2187	-477	2556	BEAUMONT - VALLEYSC 500 kV Ckt 1
24801	DEVERS	500	25014	BEAUMONT	500	1	3300	line_1401	**145.3%**	4178	343	4796	DEVERS - BEAUMONT 500 kV Ckt 2
24801	DEVERS	500	25014	BEAUMONT	500	2	3300	line_1400	**145.3%**	4178	343	4796	DEVERS - BEAUMONT 500 kV Ckt 1
25014	BEAUMONT	500	25016	BEAUMONT	230	1	1680 MVA	line_238	73.6%	1184	355	1412	ALBERHIL 500.0 to VALLEYSC 500.0 Circuit 1
25014	BEAUMONT	500	25016	BEAUMONT	230	2	1680 MVA	line_238	73.6%	1184	355	1412	ALBERHIL 500.0 to VALLEYSC 500.0 Circuit 1
25014	BEAUMONT	500	25016	BEAUMONT	230	3	1680 MVA	line_238	73.6%	1184	355	1412	ALBERHIL 500.0 to VALLEYSC 500.0 Circuit 1
25016	BEAUMONT	230	25666	EL CASCO	230	1	4360	line_238	43.8%	704	33	1909	ALBERHIL 500.0 to VALLEYSC 500.0 Circuit 1
25016	BEAUMONT	230	24132	SANBRDNO	230	1	4360	line_238	50.4%	808	72	2196	ALBERHIL 500.0 to VALLEYSC 500.0 Circuit 1
25016	BEAUMONT	230	24901	VSTA	230	1	4360	line_238	63.9%	1020	137	2785	ALBERHIL 500.0 to VALLEYSC 500.0 Circuit 1
25016	BEAUMONT	230	24901	VSTA	230	2	4360	line_238	63.9%	1020	137	2785	ALBERHIL 500.0 to VALLEYSC 500.0 Circuit 1
25666	EL CASCO	230	24132	SANBRDNO	230	1	4360	line_238	36.5%	584	-17	1590	ALBERHIL 500.0 to VALLEYSC 500.0 Circuit 1

Option #2 Results

Option #2, wherein the existing 220 kV circuits and configuration from Devers to El Casco, San Bernardino and Vista were retained, added a 2^{nd} 500 kV, 2B-2156 circuit from Valley to Serrano (refer to Figure B2). The following tables display the result line flows for Normal conditions and Single contingency power flow runs. Note that the power flow analysis assumed a 1400 MW energy import from the Imperial Irrigation District.

Existing WOD circuits w/reactors--IID exports to ISO 1400 MW--2024 Reliability case

Normal Operating conditions

Facility								Worst Outage	Loading				Worst Outage Description
From Bus #	Name	kV	To Bus #	Name	kV	ck	Rated Amps		%	MW	MVAR	AMPS	
24804	DEVERS	230	24941	ElCascoLR	230	1	1150	base	60.2%	276	22	692	Base system (n-0)
24804	DEVERS	230	24942	SBLR	230	1	798	base	66.4%	210	29	529	Base system (n-0)
24804	DEVERS	230	24943	Vista1LR	230	1	1150	base	59.3%	268	51	682	Base system (n-0)
24804	DEVERS	230	24944	Vista2LR	230	1	1240	base	69.4%	340	58	861	Base system (n-0)
25666	EL CASCO	230	24132	SANBRDNO	230	1	1150	base	29.2%	124	37	333	Base system (n-0)
24941	ElCascoLR	230	25666	EL CASCO	230	1	1150	base	61.5%	276	0	692	Base system (n-0)
24942	SBLR	230	24132	SANBRDNO	230	1	798	base	66.5%	210	13	529	Base system (n-0)
28311	TOT18SHS	230	24901	VSTA	230	1	1150	base	59.4%	267	24	682	Base system (n-0)
24943	Vista1LR	230	28311	TOT18SHS	230	1	1150	base	59.3%	268	30	682	Base system (n-0)
24944	Vista2LR	230	24901	VSTA	230	2	1240	base	69.6%	340	47	861	Base system (n-0)

Existing WOD circuits w/reactors--IID exports to ISO 1400 MW--2024 Reliability case

Single Contingency conditions

Facility									Loading				
From	Name	kV	To	Name	kV	ck	Rated Amps	Worst Outage	%	MW	MVAR	AMPS	Worst Outage Description
24804	DEVERS	230	24941	ElCascoLR	230	1	1150	line_27	69.4%	318	35	798	Line DEVERS - VISTA (LR) 230 kV Ckt 2
24804	DEVERS	230	24942	SBLR	230	1	798	line_20	80.2%	252	41	638	Line DEVERS - EL CASCO (LR) 230 kV
24804	DEVERS	230	24943	Vista1LR	230	1	1150	line_27	70.2%	317	65	807	Line DEVERS - VISTA (LR) 230 kV Ckt 2
24804	DEVERS	230	24944	Vista2LR	230	1	1240	line_43	80.5%	392	70	998	Line DEVERS - VALLEYSC 500 kV Ckt 1
25666	EL CASCO	230	24132	SANBRDNO	230	1	1150	line_27	37.7%	165	31	432	Line DEVERS - VISTA (LR) 230 kV Ckt 2
24941	ElCascoLR	230	25666	EL CASCO	230	1	1150	line_27	70.5%	318	6	798	Line DEVERS - VISTA (LR) 230 kV Ckt 2
24942	SBLR	230	24132	SANBRDNO	230	1	798	line_20	80.2%	252	16	638	Line DEVERS - EL CASCO (LR) 230 kV
28311	TOT185HS	230	24901	VSTA	230	1	1150	line_27	70.2%	315	27	807	Line DEVERS - VISTA (LR) 230 kV Ckt 2
24943	Vista1LR	230	28311	TOT185HS	230	1	1150	line_27	70.2%	317	36	807	Line DEVERS - VISTA (LR) 230 kV Ckt 2
24944	Vista2LR	230	24901	VSTA	230	2	1240	line_43	80.6%	392	55	998	Line DEVERS - VALLEYSC 500 kV Ckt 1

The results using CAISO's 2024 Reliability case, with 1400 MW IID to ISO export, indicate no overloads under Normal as well as under Single contingency conditions. The highest loading under single contingency is on the Devers (Vista2LR)–Vista and Devers–San Bernardino lines, shown to be ~ 80% to 81% This means there is about 19% of additional capacity available to accommodate future growth.

The results using Cluster 7 Phase I base case, with 1400 MW IID to ISO export, shows some WOD overloaded circuits, the highest being 113% on one of the Devers–San Bernardino lines under Single contingency conditions. However, the 500 kV system shows no overloads under Normal as well as under Single contingency conditions. The following Tables display the resulting line flows for Normal conditions and single contingency power flow runs.

Existing WOD circuits w/reactors--IID exports to ISO 1400 MW--Cluster 7 Phase I case

Normal Operating conditions

Facility									Loading				
From Bus #	Name	kV	To Bus #	Name	kV	ck	Rated Amps	Worst Outage	%	MW	MVAR	AMPS	Worst Outage Description
24804	DEVERS	230	24941	ElCascoLR	230	1	1150	base	81.5%	369	19	937	Base system (n-0)
24804	DEVERS	230	24942	SBLR	230	1	798	base	94.5%	295	22	752	Base system (n-0)
24804	DEVERS	230	24943	Vista1LR	230	1	1150	base	59.9%	267	48	689	Base system (n-0)
24804	DEVERS	230	24944	Vista2LR	230	1	1240	base	93.6%	453	58	1160	Base system (n-0)
25666	EL CASCO	230	24132	SANBRDNO	230	1	1150	base	54.6%	244	-11	628	Base system (n-0)
24941	ElCascoLR	230	25666	EL CASCO	230	1	1150	base	81.5%	369	-21	937	Base system (n-0)
24132	SANBRDNO	230	24942	SBLR	230	1	798	base	94.5%	-284	61	749	Base system (n-0)
28311	TOT185HS	230	24901	VSTA	230	1	1150	base	93.5%	416	7	1075	Base system (n-0)
24943	Vista1LR	230	28311	TOT185HS	230	1	1150	base	59.9%	267	27	689	Base system (n-0)
24944	Vista2LR	230	24901	VSTA	230	2	1240	base	93.6%	453	38	1160	Base system (n-0)

Existing WOD circuits w/reactors--IID exports to ISO 1400 MW--Cluster 7 Phase I case

Single Contingency conditions

Facility								Worst Outage	Loading				
From Bus #	Name	kV	To Bus #	Name	kV	ck	Rated Amps		%	MW	MVAR	AMPS	Worst Outage Description
24804	DEVERS	230	24941	ElCascoLR	230	1	1150	line_36	93.5%	420	44	1075	Line ALBERHIL - VALLEYSC 500 kV Ckt 1
24804	DEVERS	230	24942	SBLR	230	1	798	line_20	112.7%	350	39	897	Line DEVERS - EL CASCO (LR) 230 kV
24804	DEVERS	230	24943	Vista1LR	230	1	1150	line_27	73.9%	328	66	849	Line DEVERS - VISTA (LR) 230 kV Ckt 2
24804	DEVERS	230	24944	Vista2LR	230	1	1240	line_36	108.4%	520	88	1345	Line ALBERHIL - VALLEYSC 500 kV Ckt 1
25666	EL CASCO	230	24132	5ANBRDNO	230	1	1150	line_27	66.5%	295	-23	765	Line DEVER5 - VISTA (LR) 230 kV Ckt 2
24941	ElCascoLR	230	25666	EL CASCO	230	1	1150	line_36	93.5%	420	-8	1075	Line ALBERHIL - VALLEYSC 500 kV Ckt 1
24132	SANBRDNO	230	24942	SBLR	230	1	798	line_20	112.7%	-334	84	893	Line DEVERS - EL CASCO (LR) 230 kV
28311	TOT185HS	230	24901	VSTA	230	1	1150	line_27	107.6%	476	11	1237	Line DEVERS - VISTA (LR) 230 kV Ckt 2
24943	Vista1LR	230	28311	TOT185H5	230	1	1150	line_27	73.9%	328	33	849	Line DEVERS - VISTA (LR) 230 kV Ckt 2
24944	Vista2LR	230	24901	VSTA	230	2	1240	line_36	108.4%	520	61	1345	Line ALBERHIL - VALLEYSC 500 kV Ckt 1

Regarding overloading under single contingency conditions for Cluster 7 Phase I base case with 1400 MW of IID export (a worst case scenario), potential mitigation for the single contingency overload(s) may consist of the following:

1. Add more series reactors to reduce flow on the overloaded circuits
2. Add series "capacitors" in 500 kV lines to shift power away from the 230 kV system and on to 500 kV system
3. Use alternative conductor 795 DRAKE ACCR, remove series reactors, keep the new Valley–Serrano 500 kV line

Mitigation #1 may not be a good option as it is likely to cause voltage problems on the downstream system. From a planning perspective, adding series reactors should be avoided as much as possible as they weaken the system.

Mitigation #2 is a highly viable solution; however, it will not work in our situation because the Devers–Valley circuits get loaded to 98% of capacity when one of the two circuits is in an outage condition. Thus, there is no capacity available to transfer power from the 230 kV system. The third plot in the attachment shows the loading on Devers – Valley circuits after this outage takes place.

Mitigation #3 is a viable option and worth consideration.

Appendix C

Power Flow Plots

CASE #1--ISO 2024 Summer Peak Reliability Base Case 44

CASE #1--ISO 2024 Summer Peak Reliability Base Case + Outage....................45

CASE #2--ISO 2024 Reliability + IID-ISO Export of 1400 MW 46

CASE #2--ISO 2024 Reliability + IID-ISO Export of 1400 M + Outage 47

CASE #3--ISO 2024 Reliability + IID-ISO Export of 1400 MW + Alternate Conductor 48

CASE #3--ISO 2024 Reliability + IID-ISO Export of 1400 MW + Alternate Conductor + Outage....................49

CASE #4--ISO Cluster 7 Phase I (2019) case 50

CASE #4--ISO Cluster 7 Phase I (2019) case + Outage....................51

CASE #5--ISO Cluster 7 Phase I + IID-ISO Export of 1400 MW 52

CASE #5--ISO Cluster 7 Phase I + IID-ISO Export of 1400 MW + Outage....................53

CASE #6--ISO Cluster 7 Phase I + IID-ISO 1400 MW + Alternate Conductor 54

CASE #6--ISO Cluster 7 Phase I + IID-ISO 1400 MW + Alternate Conductor + Outage 55

CASE #7--ISO Cluster 7 Phase I (2019) case Off-Peak 56

CASE #7--ISO Cluster 7 Phase I (2019) case Off-Peak + Outage....................57

Option1A-ISO 2024 Summer Peak Reliability Base Case with Beaumont 230/500kV Substation....................58

Option1A-ISO 2024 Summer Peak Reliability Base Case with Beaumont 230/500kV Substation + Outage 59

Option1A--ISO Cluster 7 Phase I (2019) case with Beaumont 230/500kV Substation 60

Option1A--ISO Cluster 7 Phase I (2019) case with Beaumont 230/500kV Substation + Outage....................61

Option1B-ISO 2024 Summer Peak Reliability Base Case with Beaumont 230/500kV Substation 62

Option1B-ISO 2024 Summer Peak Reliability Base Case with Beaumont 230/500kV Substation + Outage 63

Option1B--ISO Cluster 7 Phase I (2019) case with Beaumont 230/500kV Substation....................64

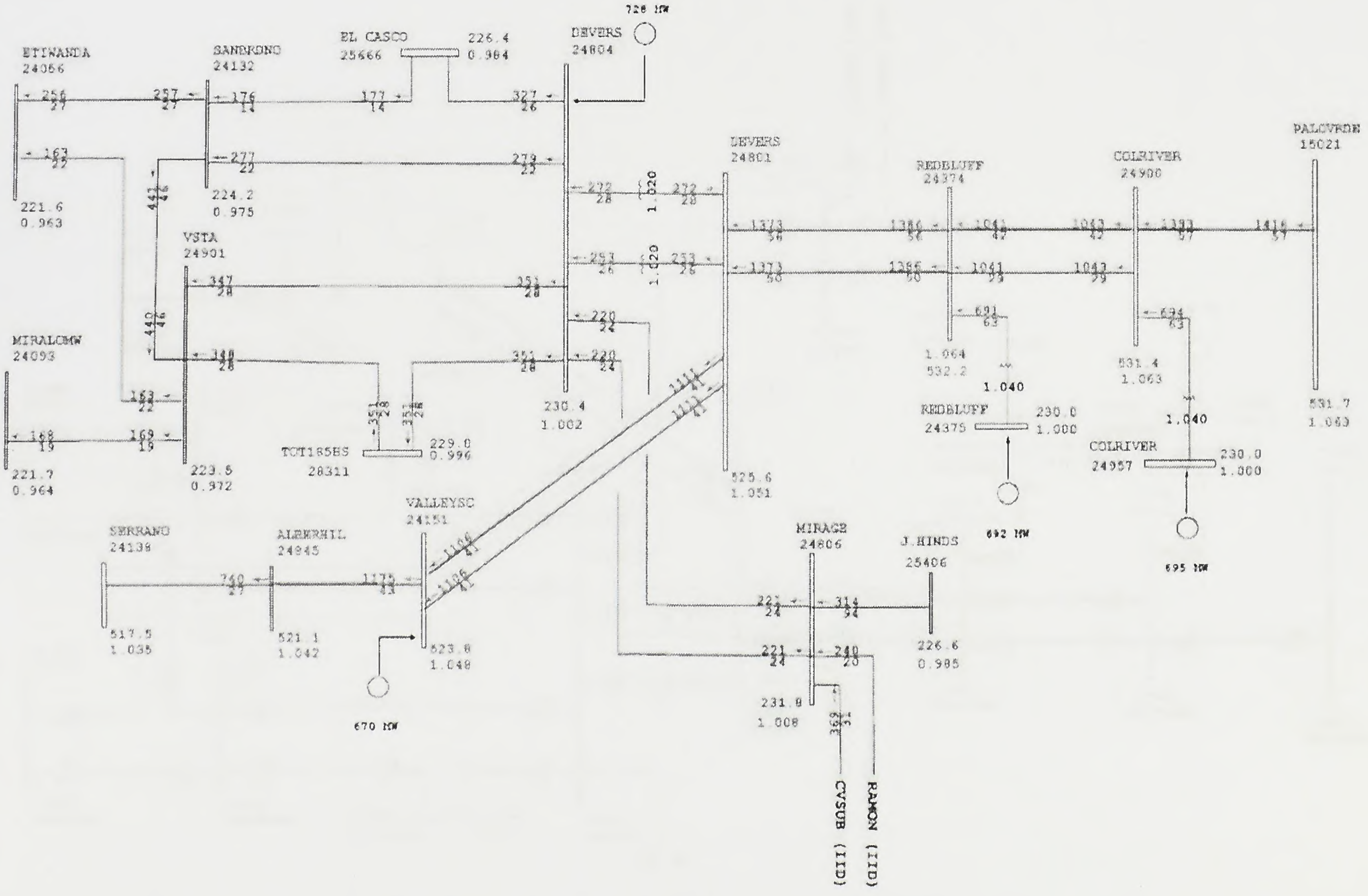
Option1B--ISO Cluster 7 Phase I (2019) case with Beaumont 230/500kV Substation + Outage 65

Option 2--Existing System + New VAL-SER line--ISO24 Reliability + IID-ISO 1400 MW 66

Option 2--Existing System + New VAL-SER line--ISO C7PhI + IID-ISO 1400 MW....................67

Option 2--Existing System + New VAL-SER line--ISO C7PhI + IID-ISO 1400 MW + Outage 68

CASE #1--ISO 2024 Summer Peak Reliability Base Case



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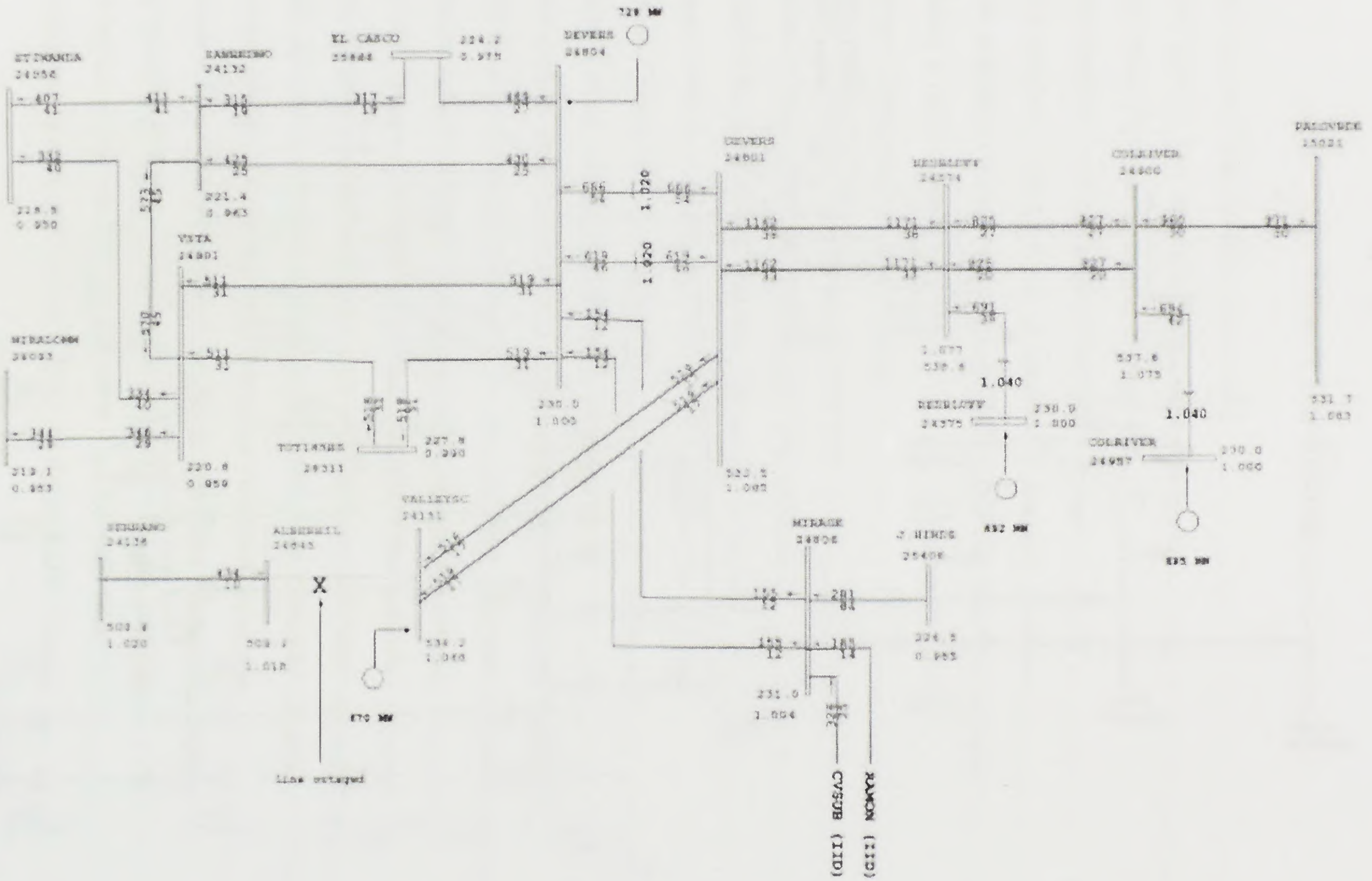
2014 SCE ATRA BASE CASE
STUDY SCENARIO: Peak
CASE NAME: 24-p-main

DATE: 03/18/2014
WECC SEED: 23HS1 Published 10/22/2012

MW/% rate
ISO24Reliab.drw
Rating = 1

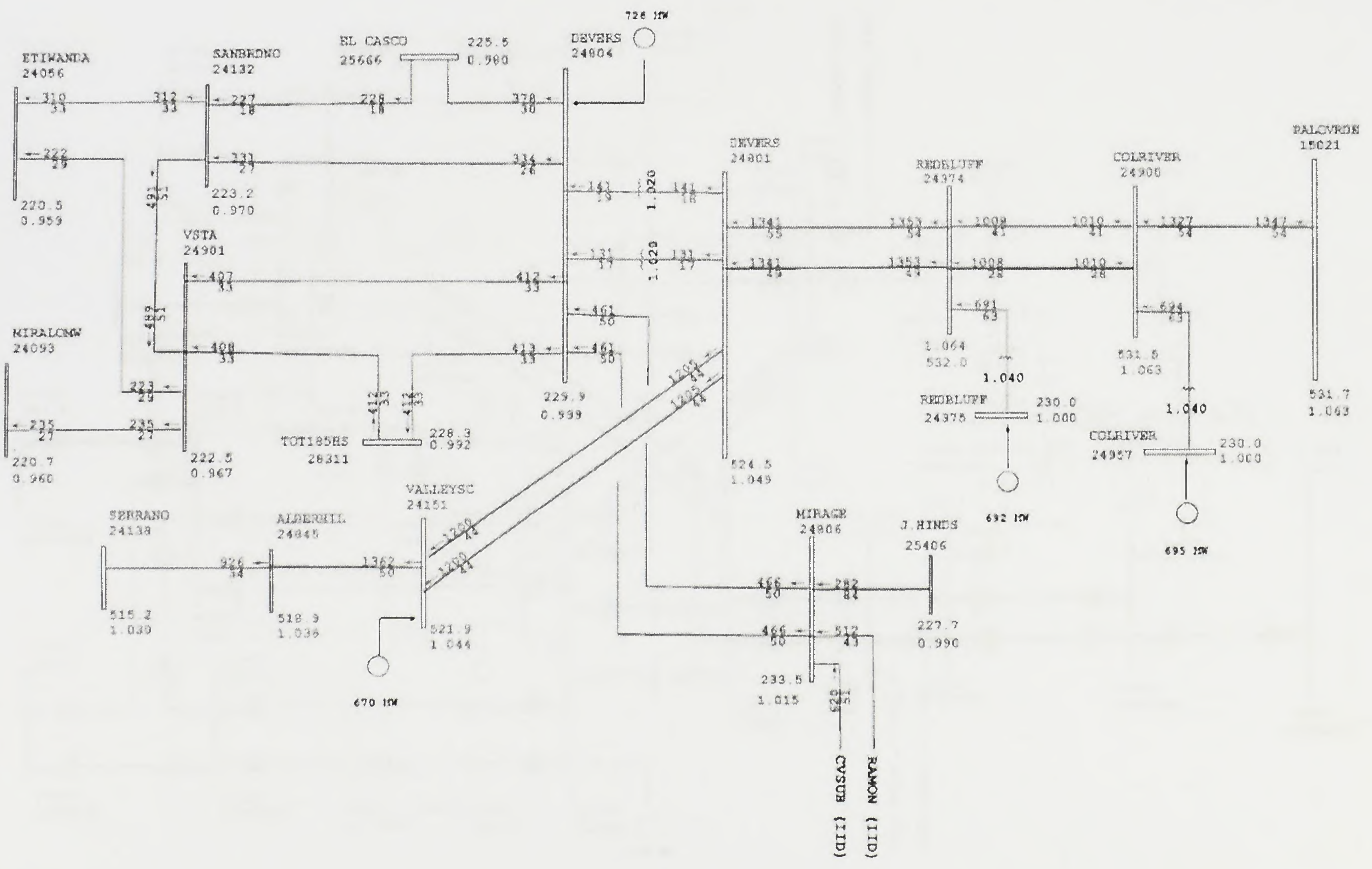
CASE #1--ISO 2024 Summer Peak Reliability Base Case

Alberhill - Valley 500 kV line out



General Electric International, Inc. PSLF Program Tue May 05 09:35:07 2015 cases\SCE24spECD.sav

CASE #2--ISO 2024 Reliability + IID-ISO Export of 1400 MW



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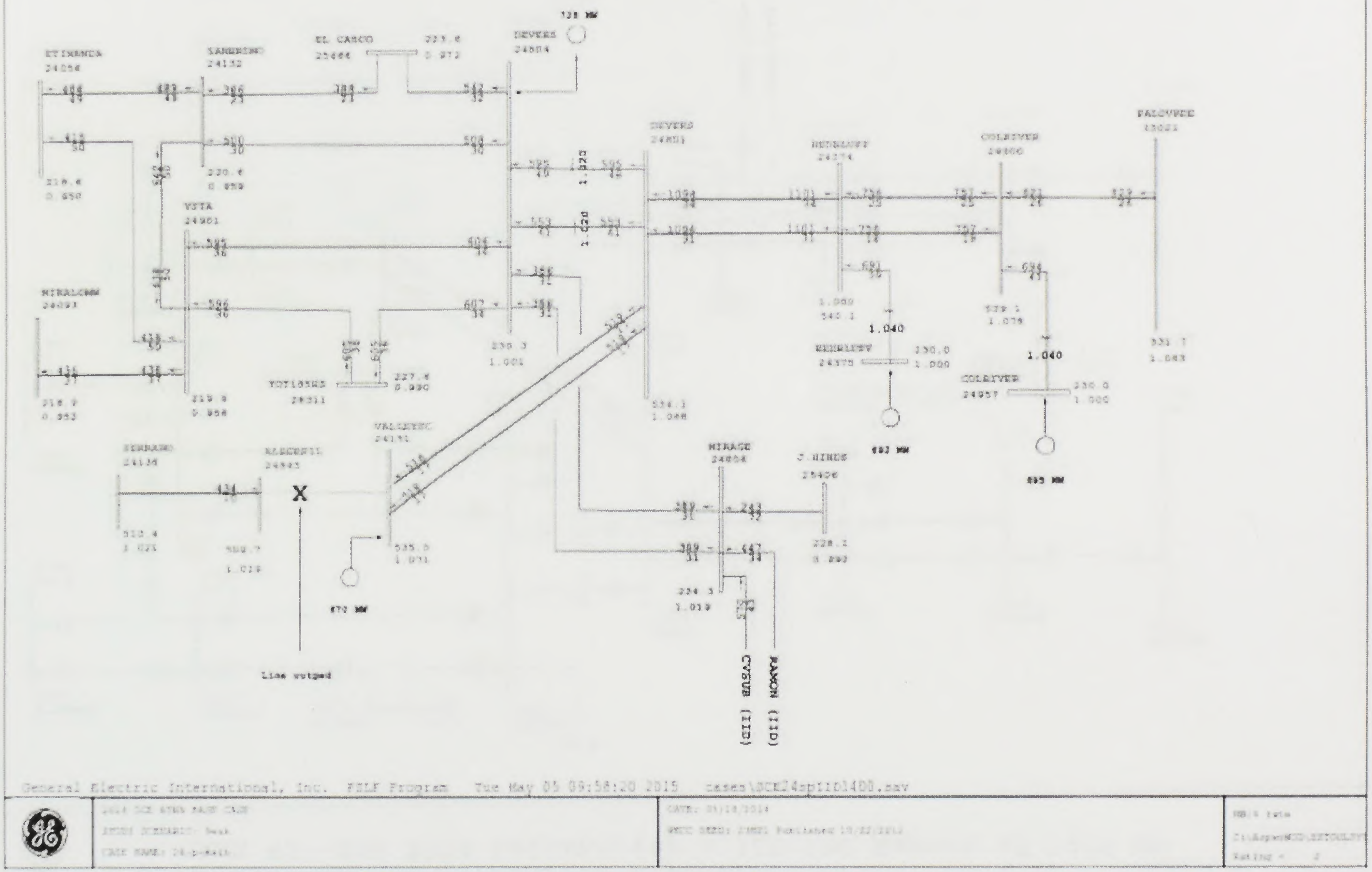
2014 SCE ATRA BASE CASE
STUDY SCENARIO: Peak
CASE NAME: 24-p-main

DATE: 02/18/2014
WECC SEED: 23HS1 Published 10/22/2012

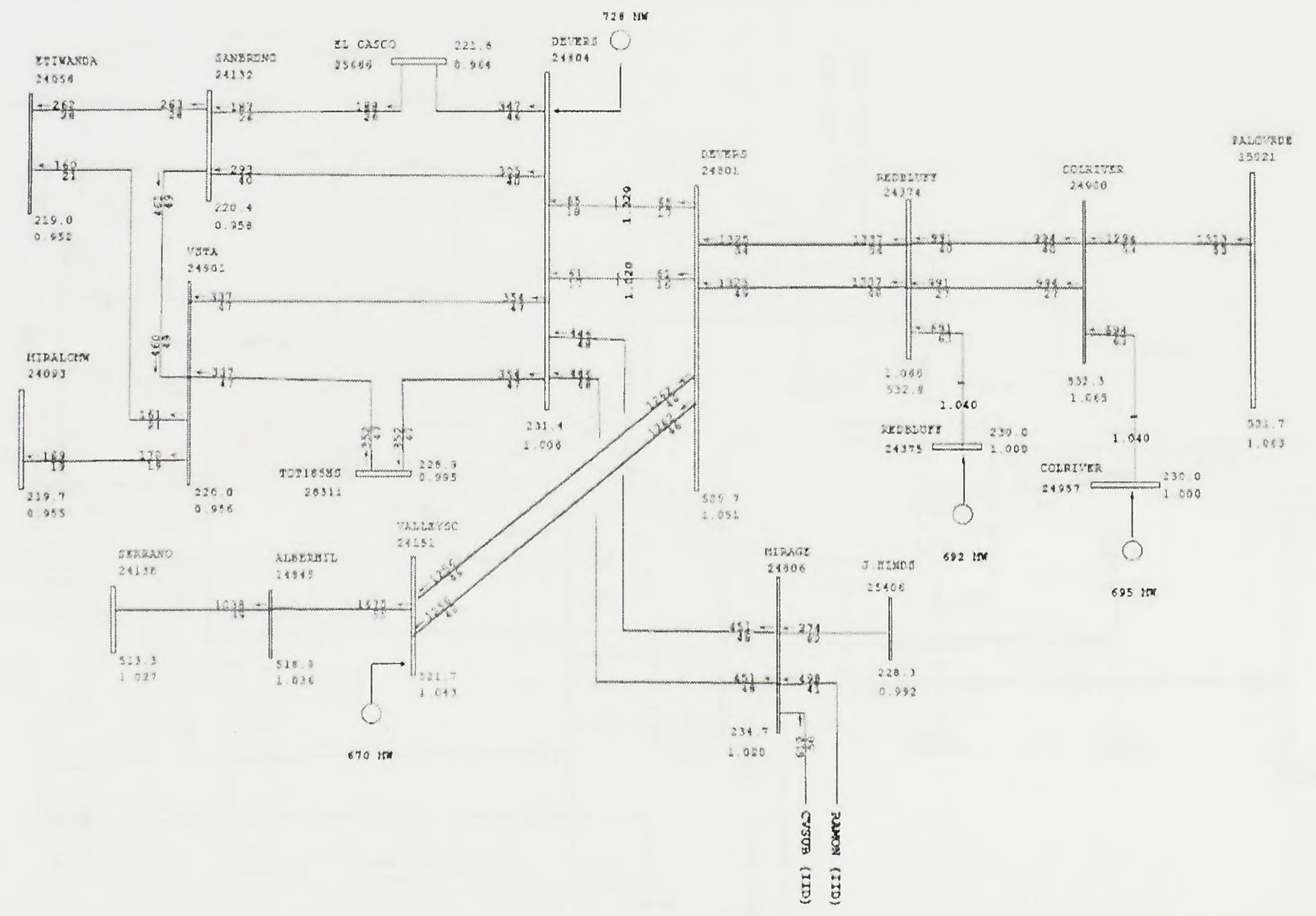
MW/% rate
ISO24Reliab+IID1400.d
Rating = 1

CASE #2--ISO 2024 Reliability + IID-ISO Export of 1400 MW

Alberhill - Valley 500 kV line out



CASE #3--ISO 2024 Reliability + IID-ISO Export of 1400 MW + Alternate Conductor



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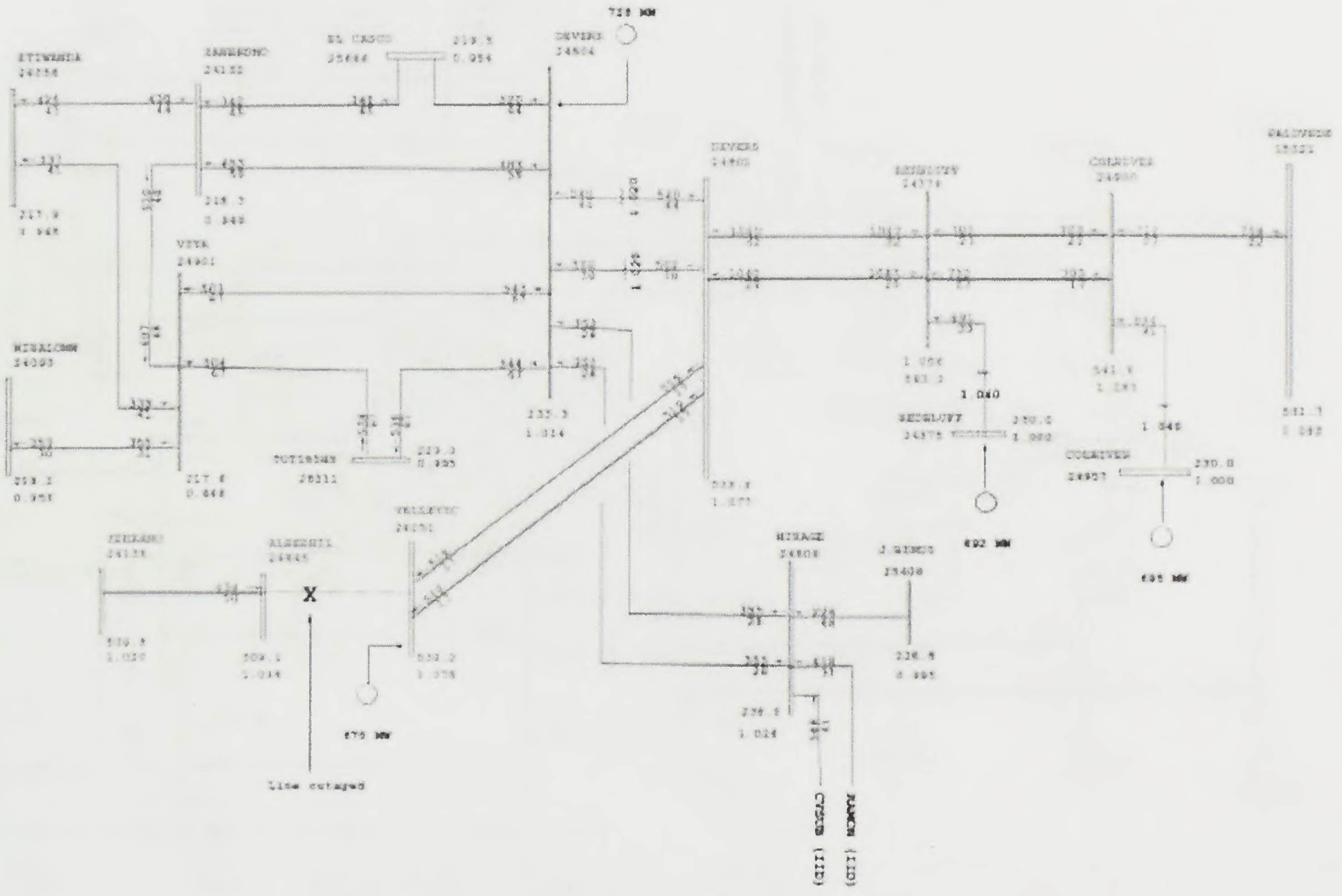
2014 SCE ATRA BASE CASE
STUDY SCENARIO: Peak
CASE NAME: 24-p-main

DATE: 09/18/2014
WECC SEED: 23H51 Published 10/22/2012

MW/% rate
ISO24Reliab+IID1400+A
Rating = 1

CASE #3--ISO 2024 Reliability + IID-ISO Export of 1400 MW + Alternate Conductor

Alberhill - Valley 500 kV line out



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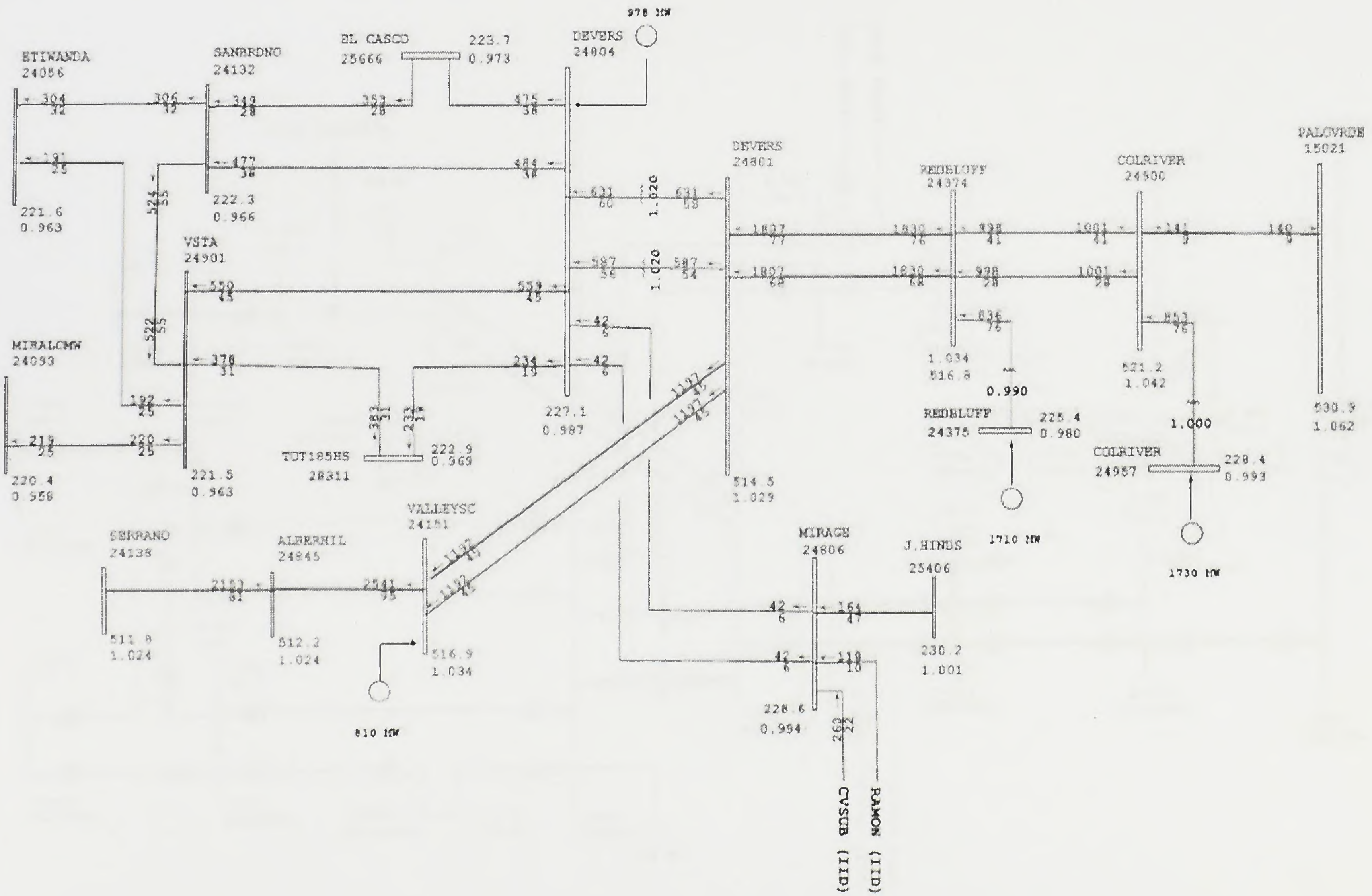
2014 SCE ATRA BASE CASE
STUDY SCENARIO: Peak
CASE NAME: 24-p-main

DATE: 03/18/2014
WECC SEED: 24HS1 Published 10/22/2013

MW/% rate
Rating # 2

CASE #4--ISO Cluster 7 Phase I (2019) case



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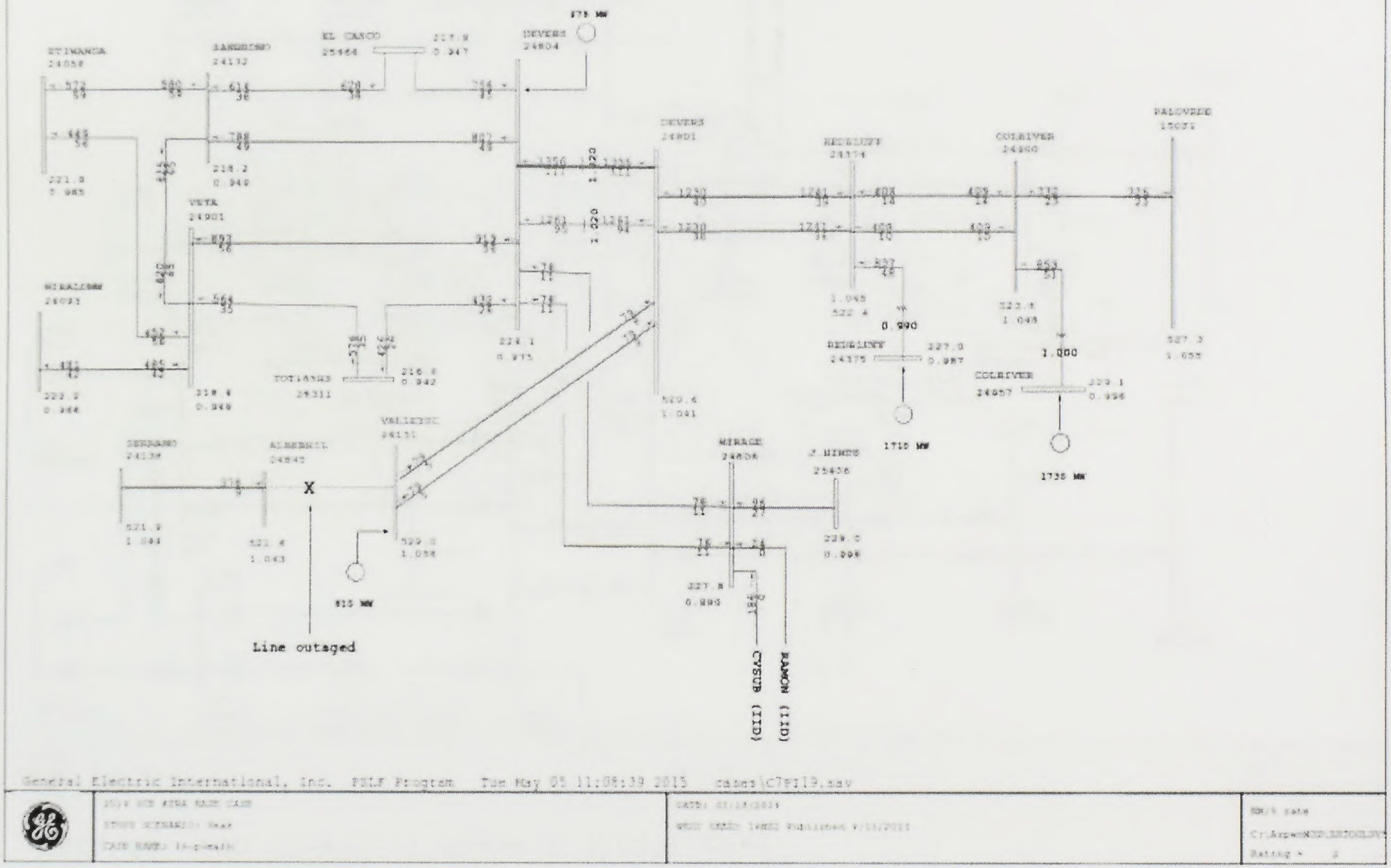
2014 SCE ATRA BASE CASE
STUDY SCENARIO: Peak
CASE NAME: 19-p-main

DATE: 03/18/2014
WECC SEED: 19HS2 Published 9/10/2013

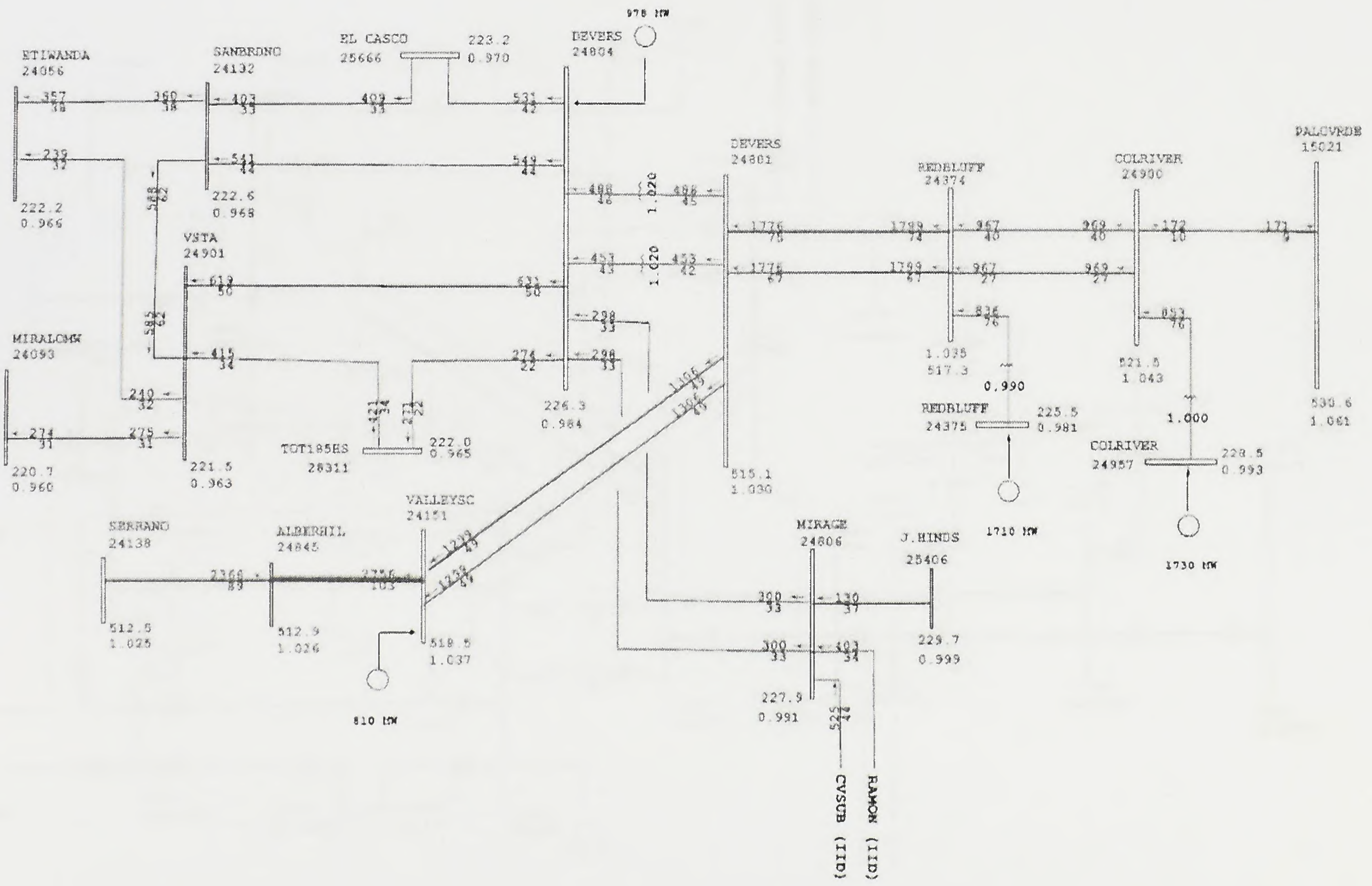
MW/% rate
C7PhI.drw
Rating = 1

CASE #4--ISO Cluster 7 Phase I (2019) case

Alberhill - Valley 500 kV line out



CASE #5--ISO Cluster 7 Phase I + IID-ISO Export of 1400 MW



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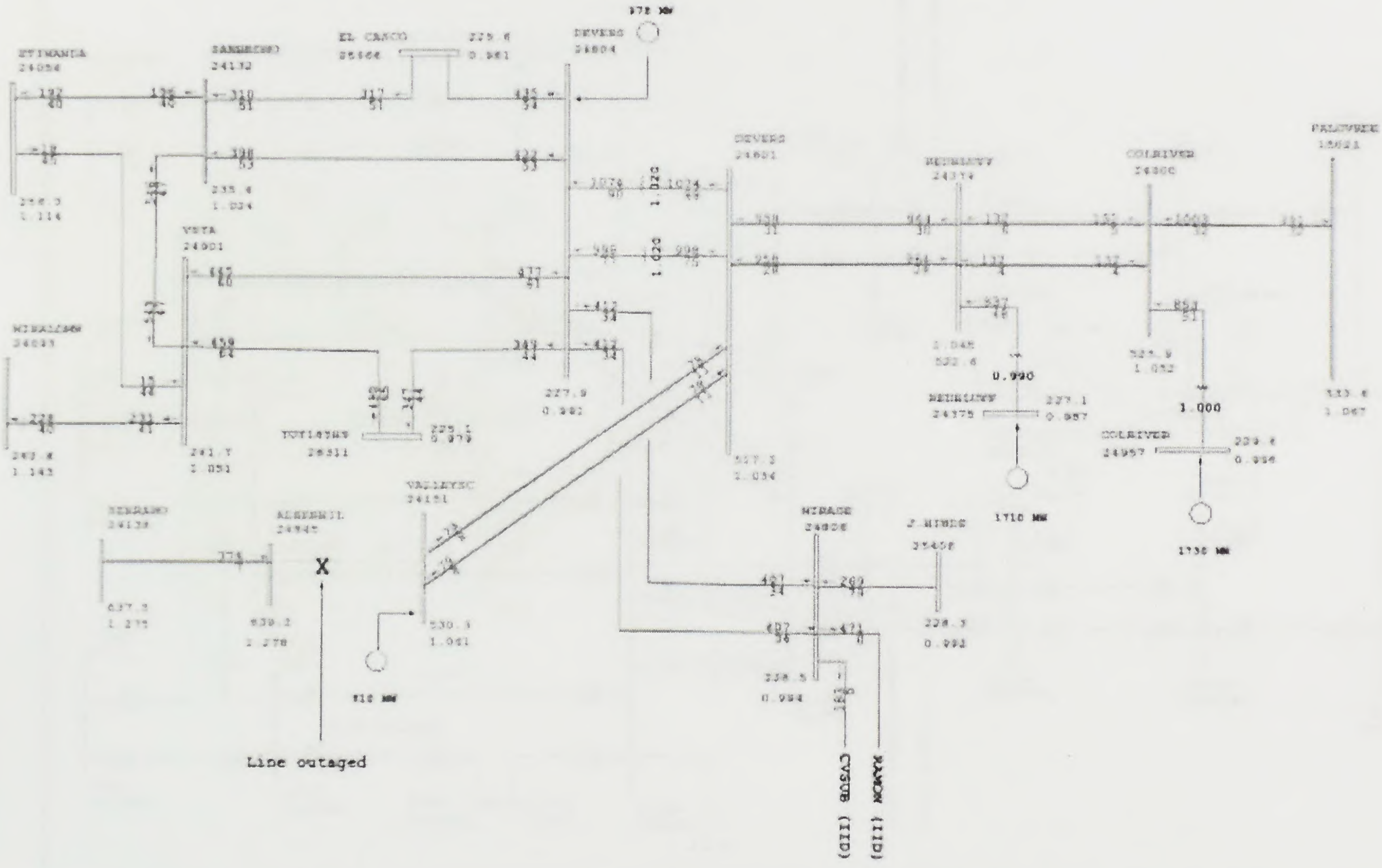
GE	2014 SCE ATRA BASE CASE STUDY SCENARIO: Peak CASE NAME: 19-p-main	DATE: 03/18/2014 WECC SEED: 19HS2 Published 9/10/2013	MW/% rate C7PhI+IID1400.drw Rating = 1

CASE #5--ISO Cluster 7 Phase I + IID-ISO Export of 1400 MW

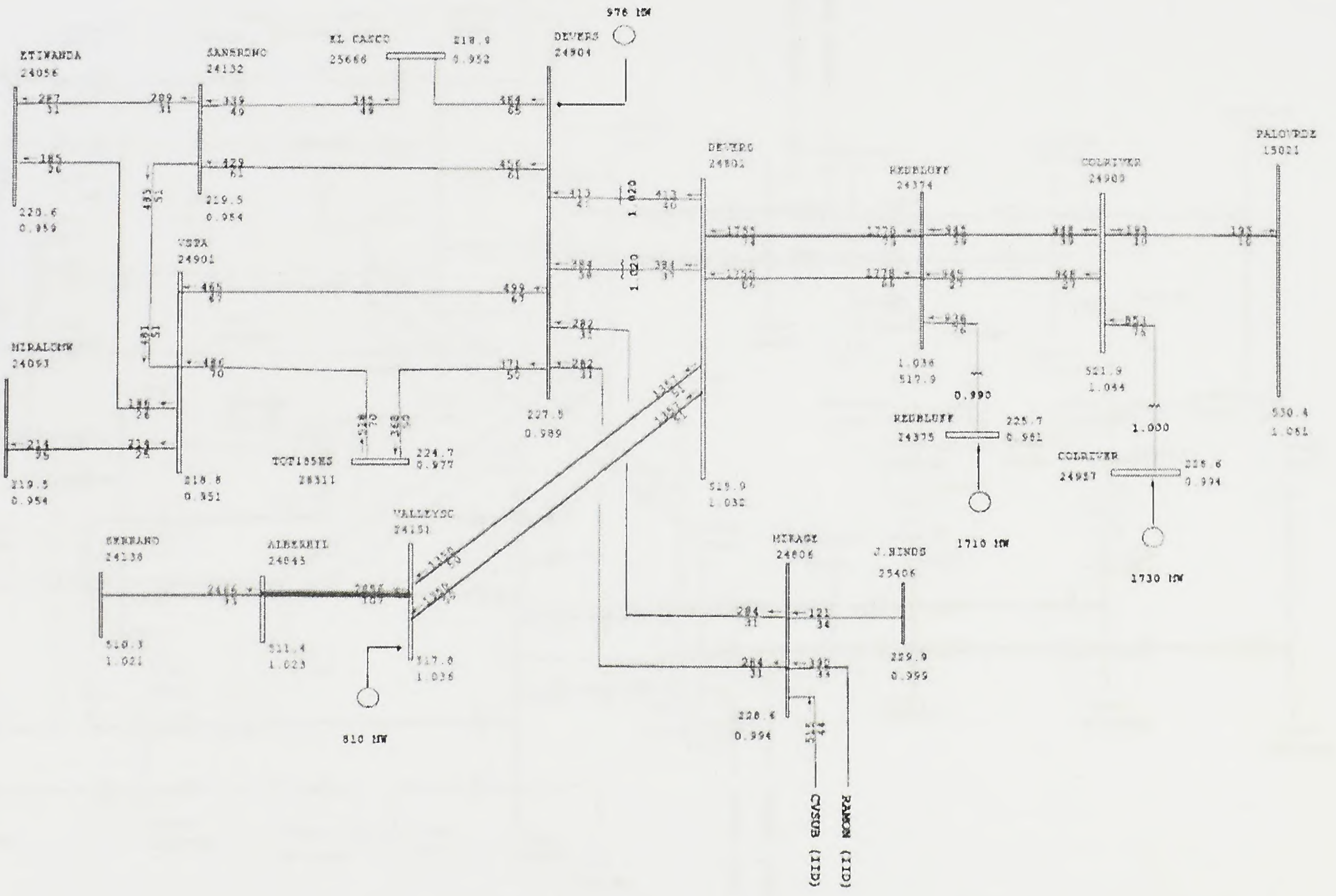
Alberhill - Valley 500 kV line out



General Electric International, Inc. PSLF Program Tue May 05 11:24:49 2015 cases\C7P1I9UP1IID1400.sav

Rating = 2

CASE #6--ISO Cluster 7 Phase I + IID-ISO 1400 MW + Alternate Conductor

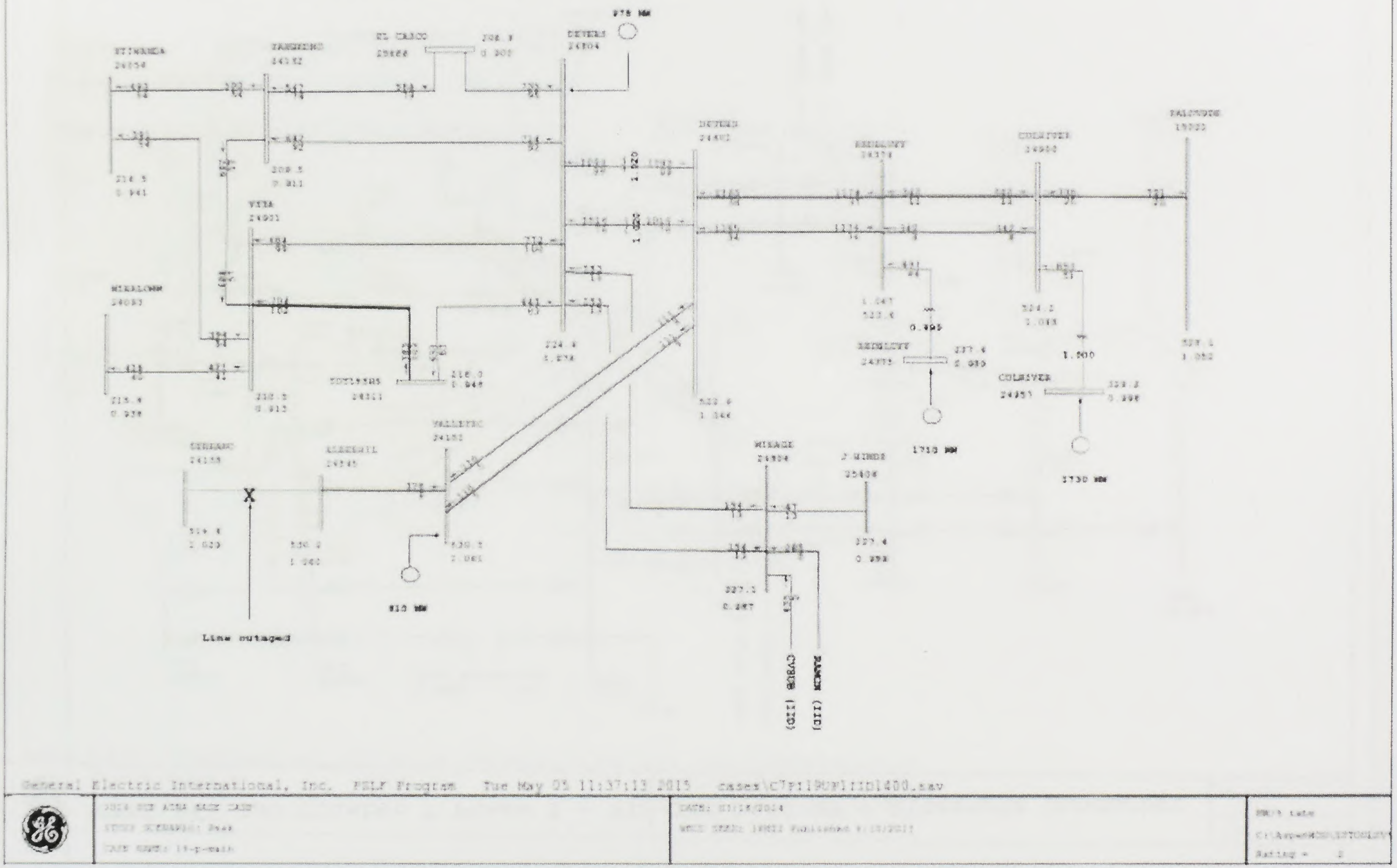


General Electric International, Inc.   PSLF Program   Thu Apr 02 20:51:38 2015   cases\C7PI19UP1IID1400.sav

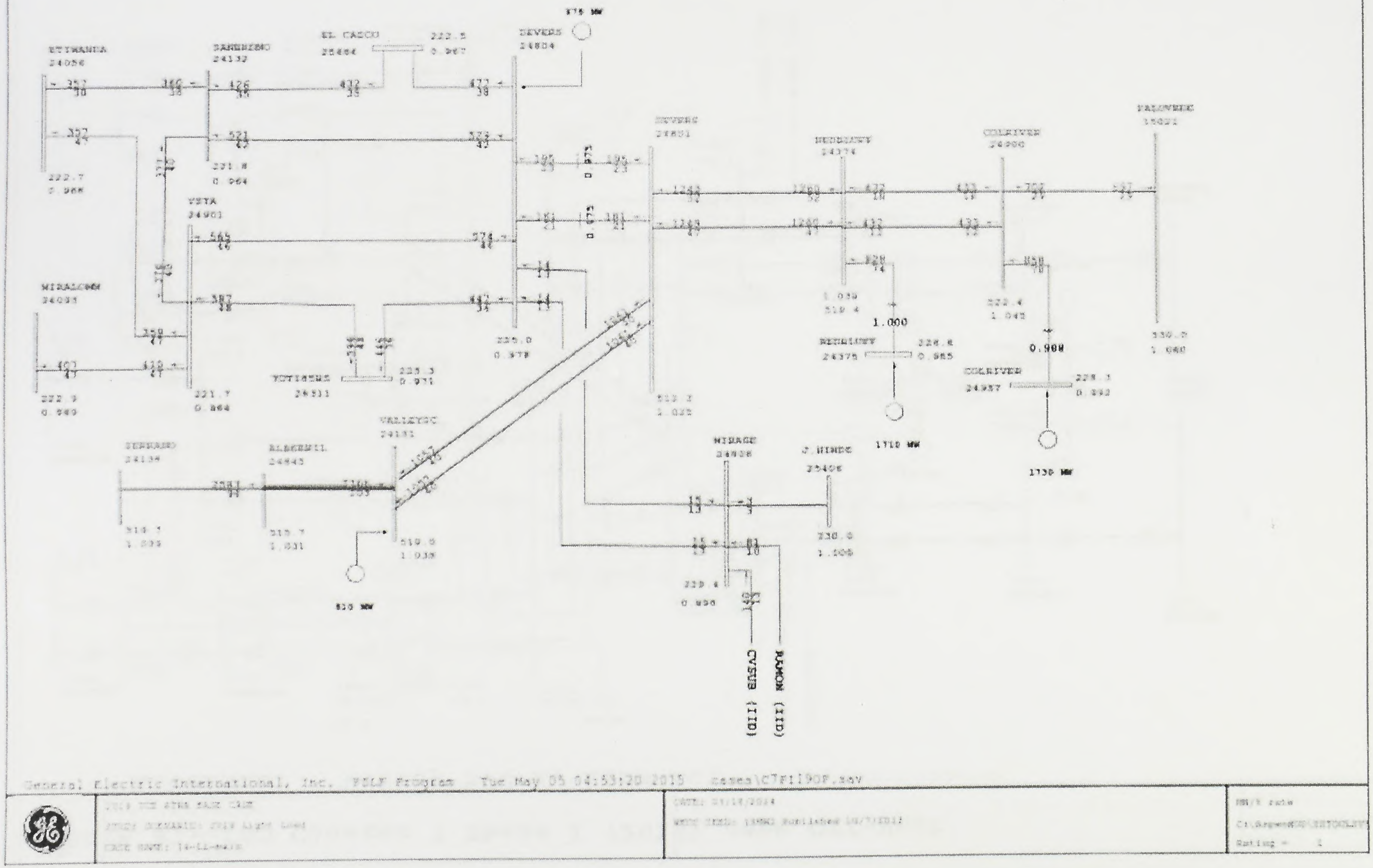
2014 SCE ATRA BASE CASE STUDY SCENARIO: Peak CASE NAME: 19-p-main	DATE: 03/28/2014 WECC SEED: 19HS2 Published 9/10/2012	MW/% rate C7PhI+IID1400+AltCond Rating = 1

CASE #6--ISO Cluster 7 Phase I + IID-ISO 1400 MW + Alternate Conductor

Alberhill - Serrano 500 kV line out

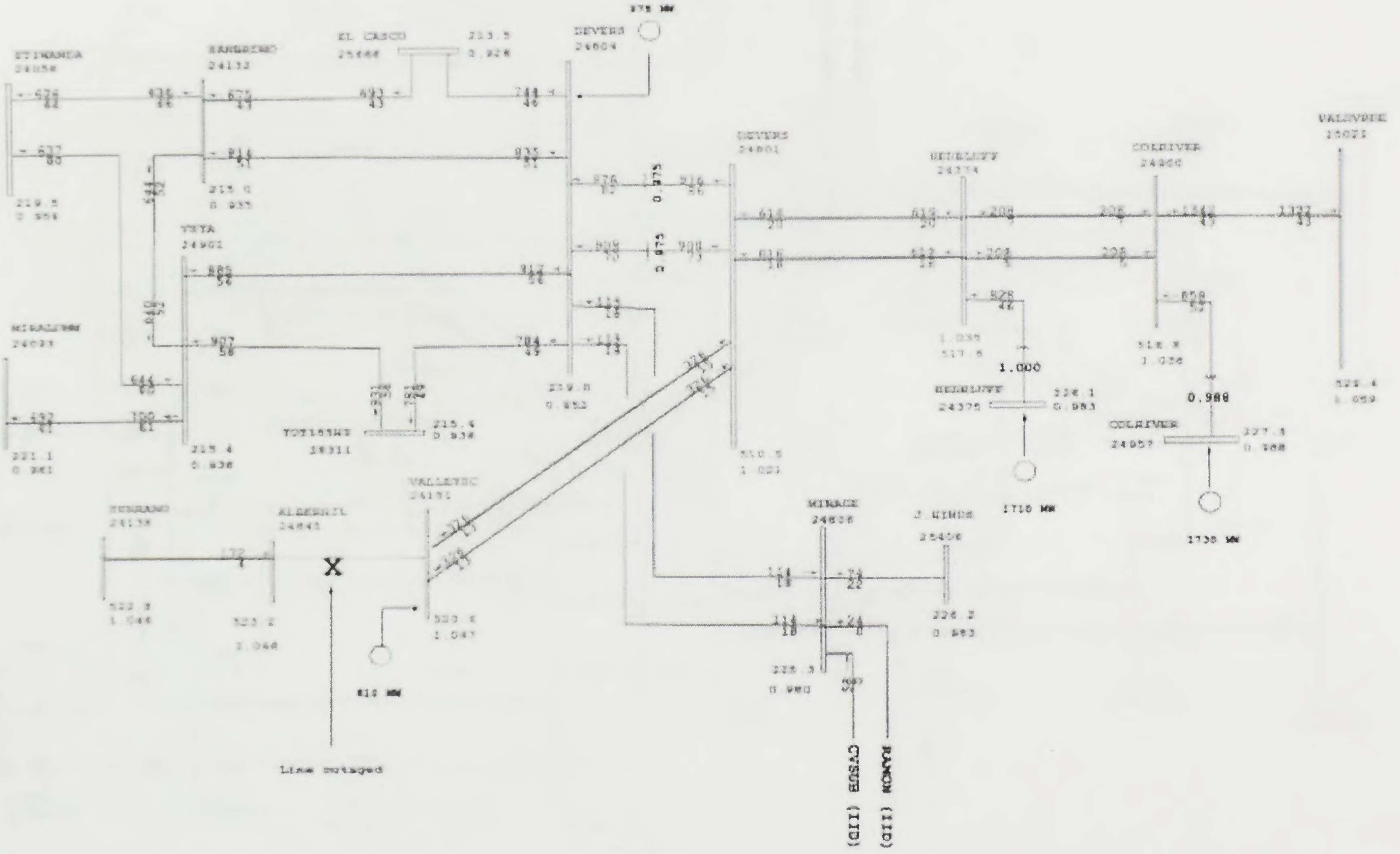


CASE #7--ISO Cluster 7 Phase I (2019) case Off-Peak



CASE #7--ISO Cluster 7 Phase I (2019) case Off-Peak

Alberhill - Valley 500 kV line out



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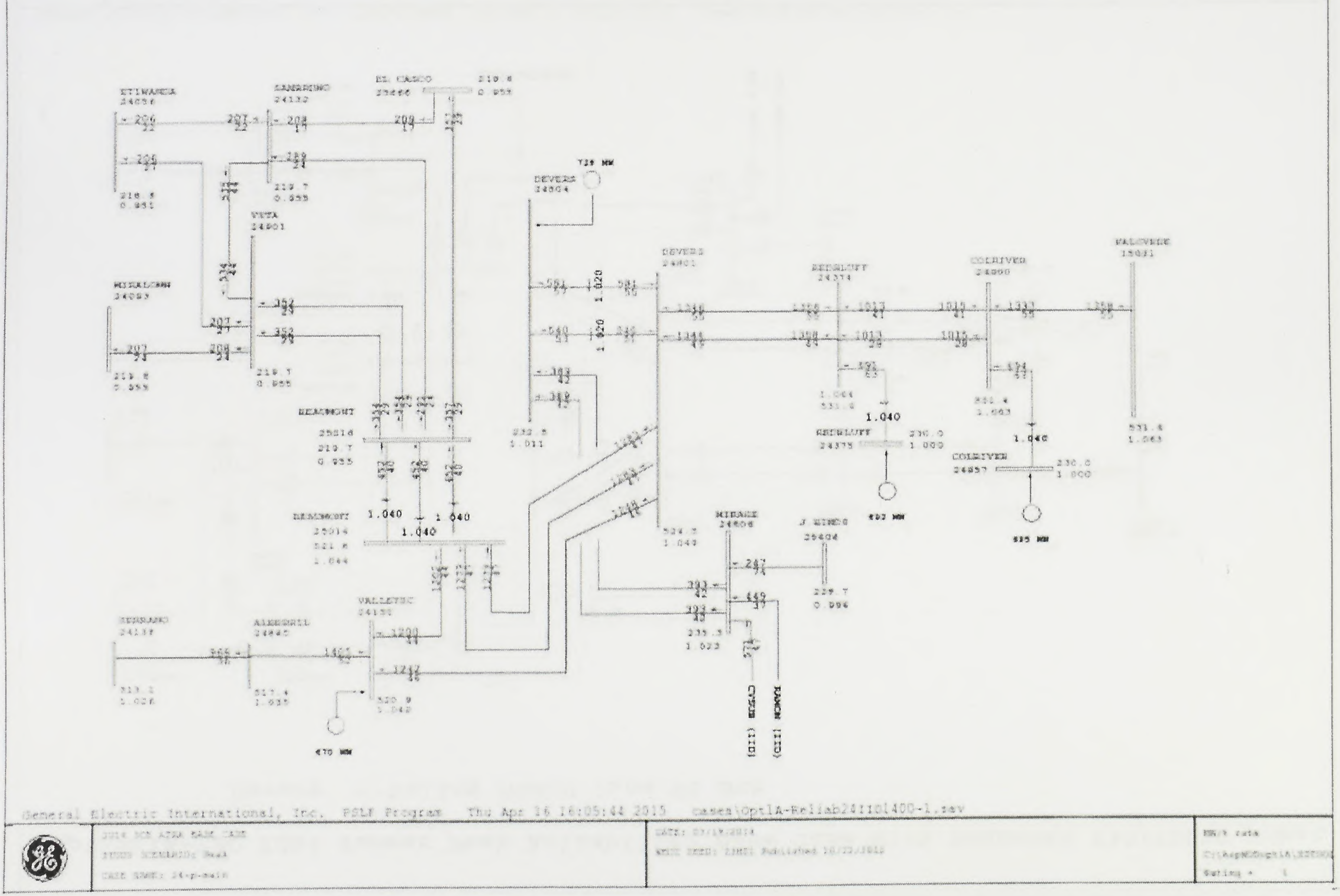
Option1A-ISO 2024 Summer Peak Reliability Base Case with Beaumont 230/500kV Subst



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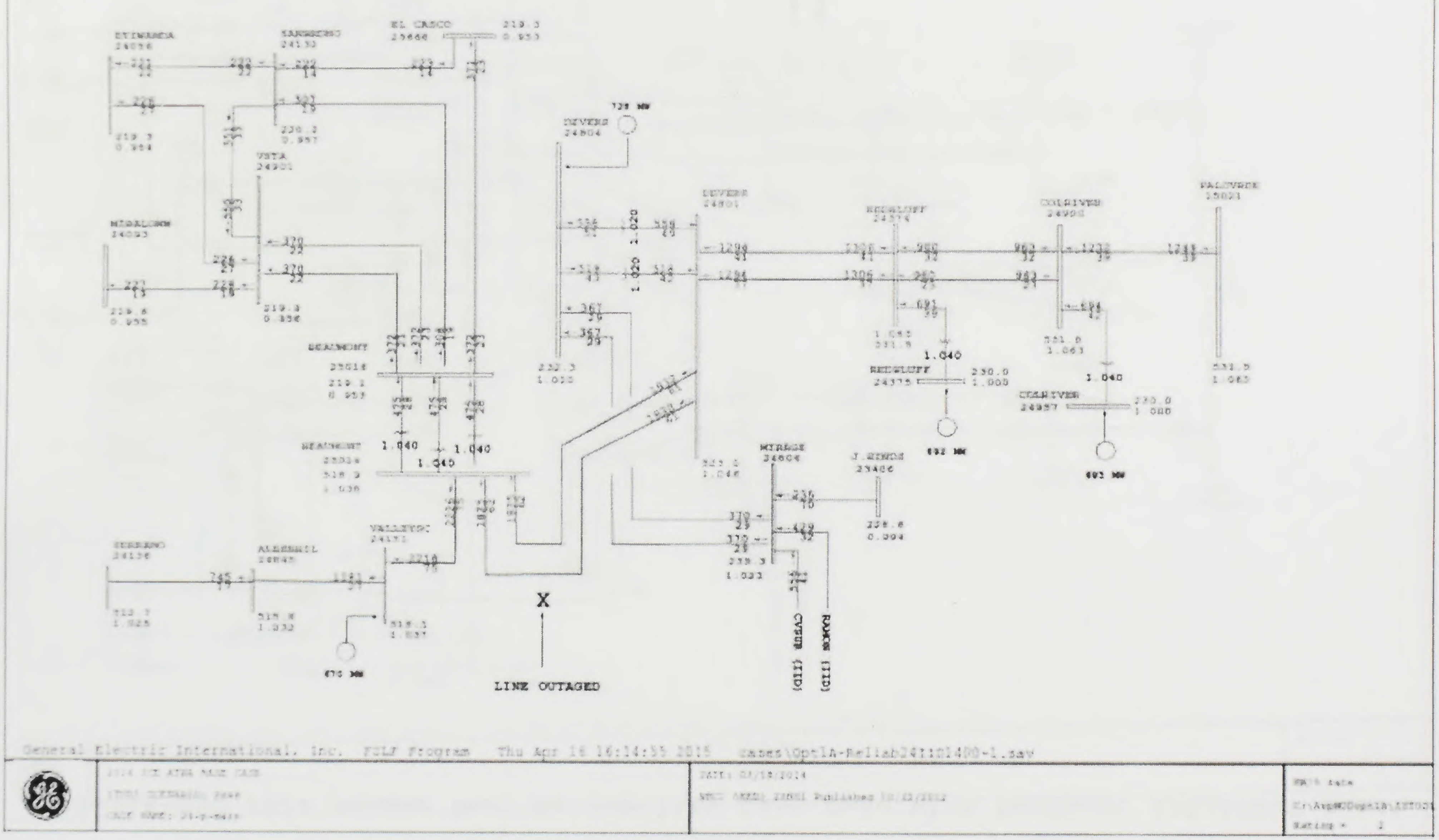
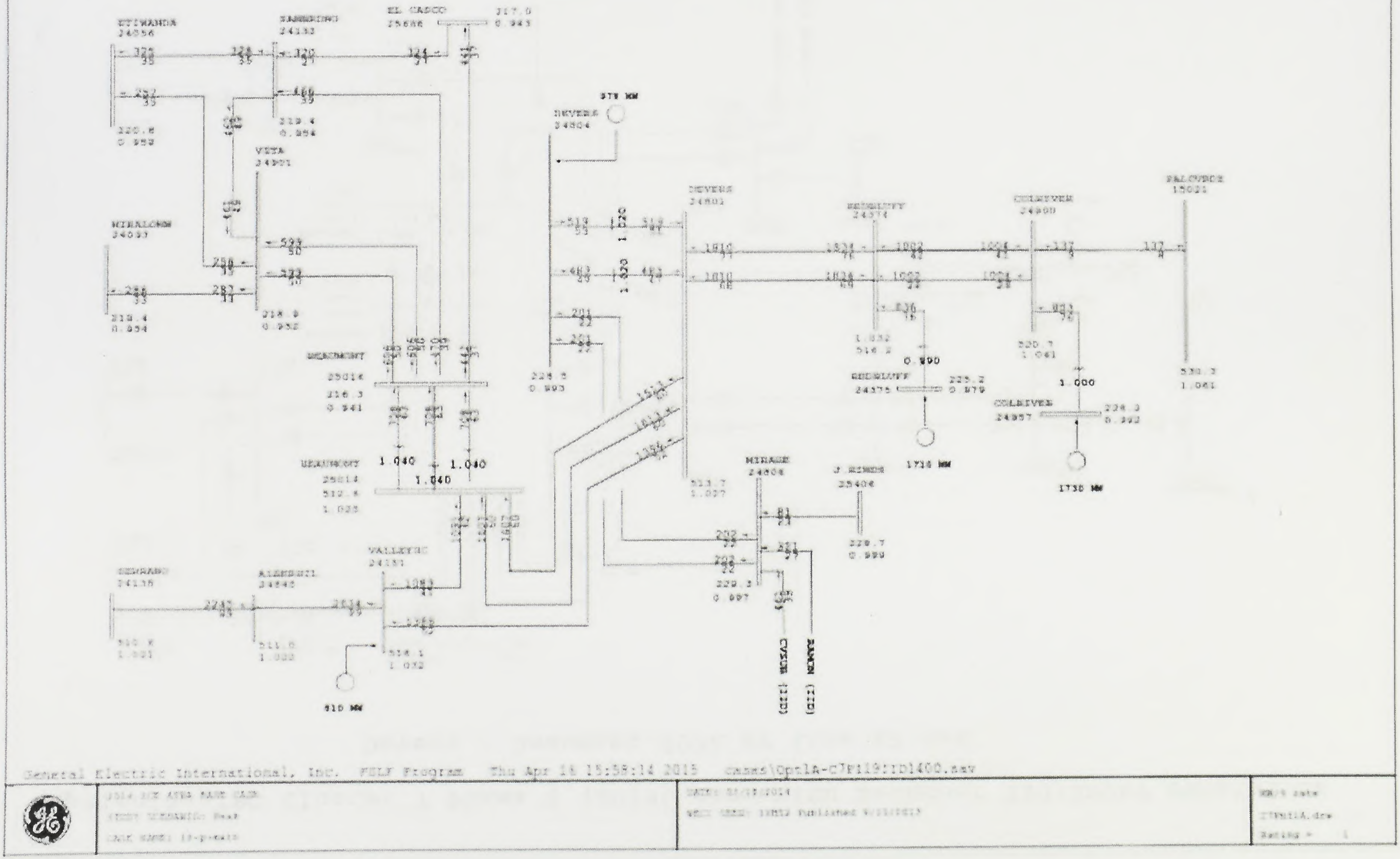
Option1A-ISO 2024 Summer Peak Reliability Base Case with Beaumont 230/500kV Subst

Devers - Valley 500kV line #2 out

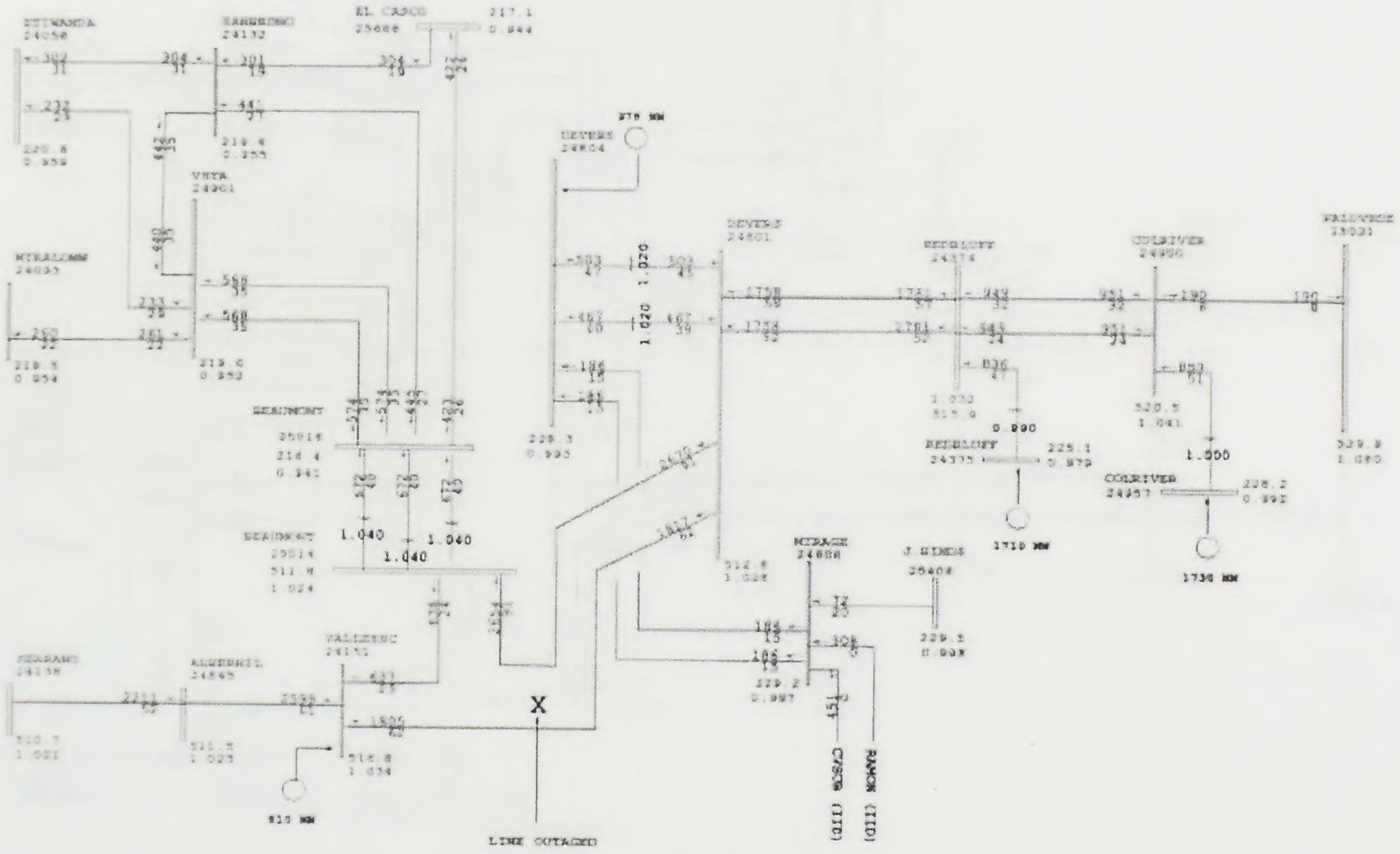


Option1A--ISO Cluster 7 Phase I (2019) case with Beaumont 230/500kV Substation



Option1A--ISO Cluster 7 Phase I (2019) case with Beaumont 230/500kV Substation

Devers - Beaumont 500k kV line #2 out



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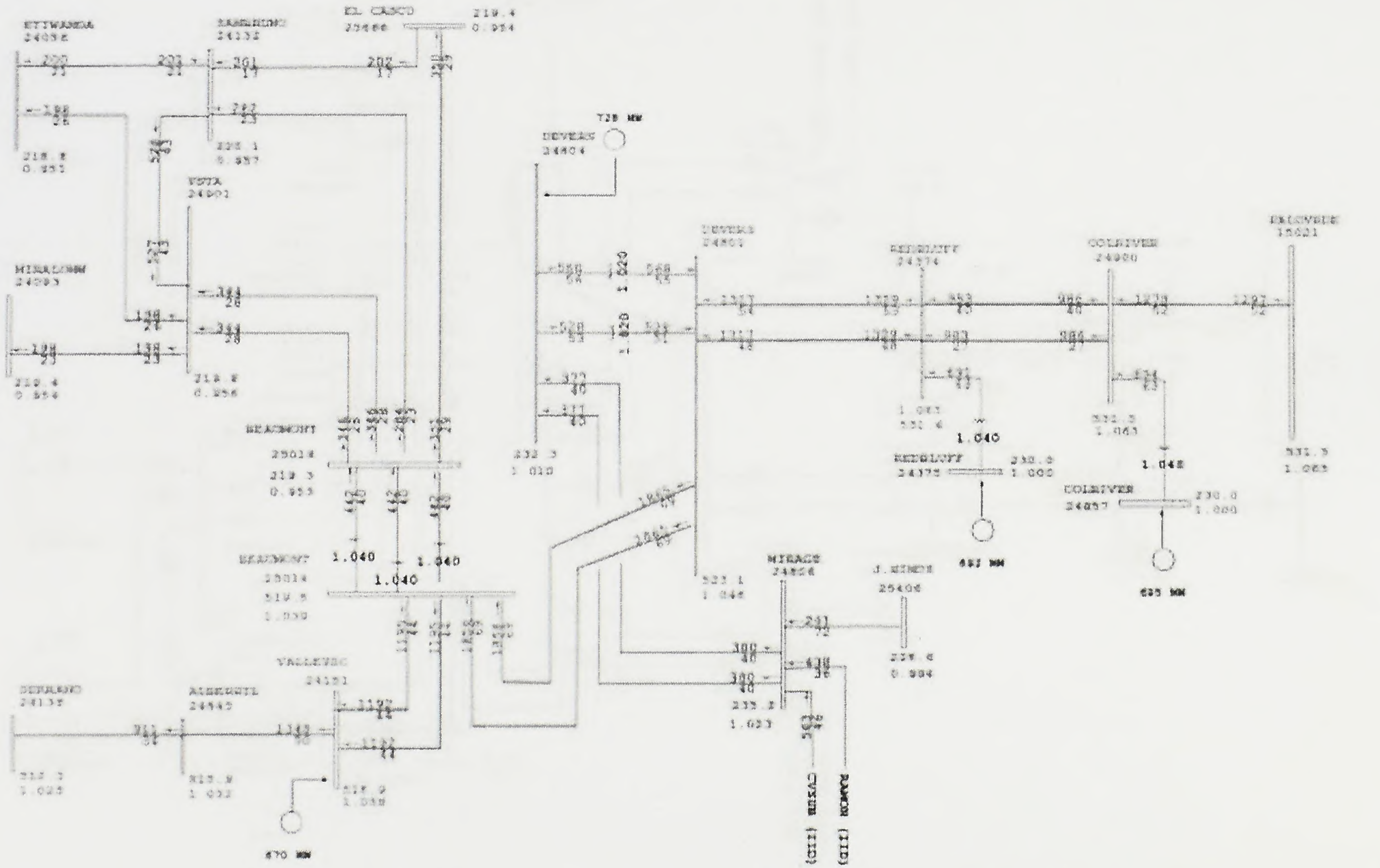
Option1B-ISO 2024 Summer Peak Reliability Base Case with Beaumont 230/500kV Subst



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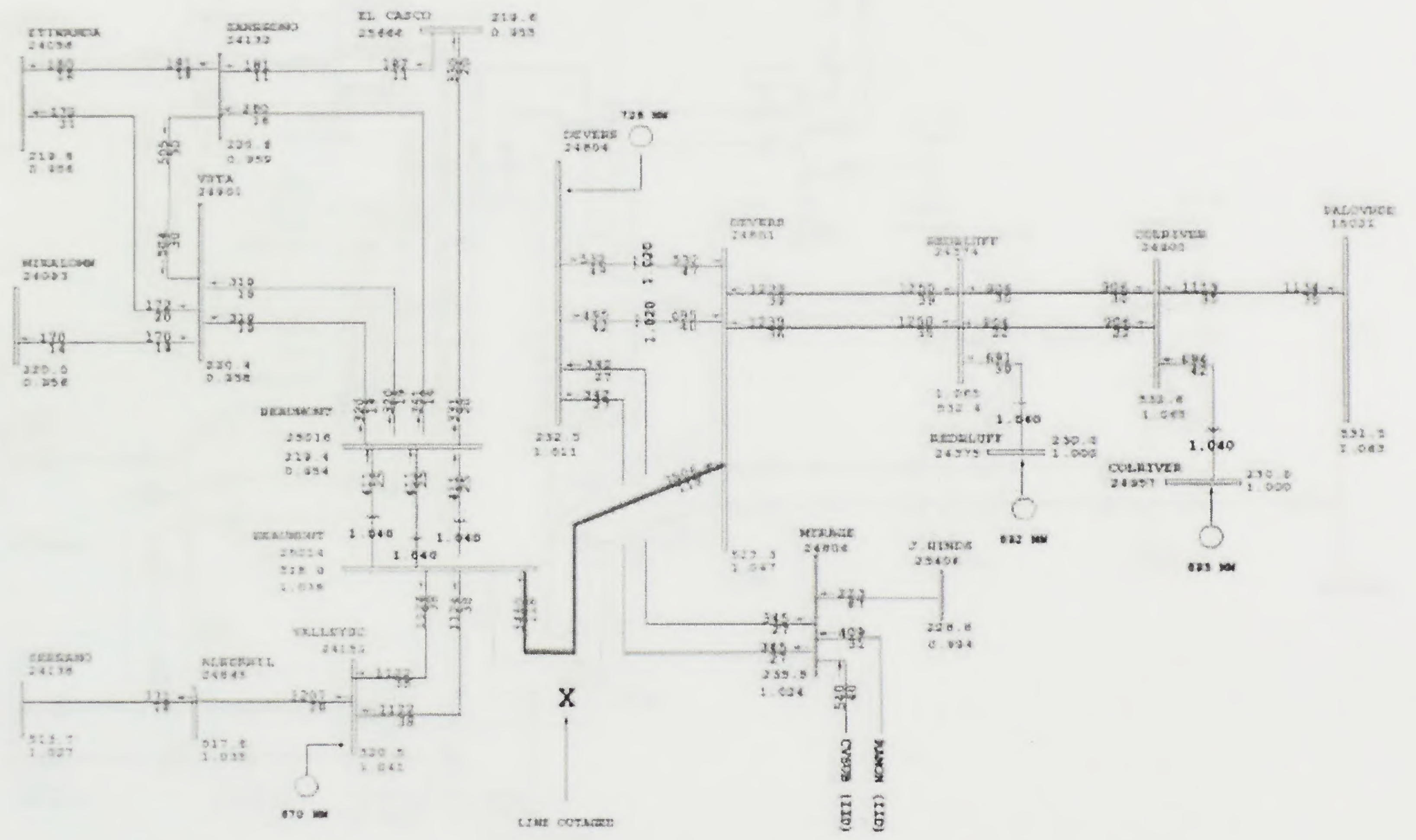
Option1B-ISO 2024 Summer Peak Reliability Base Case with Beaumont 230/500kV Subst

Devers - Beaumont 500 kV line #2 out



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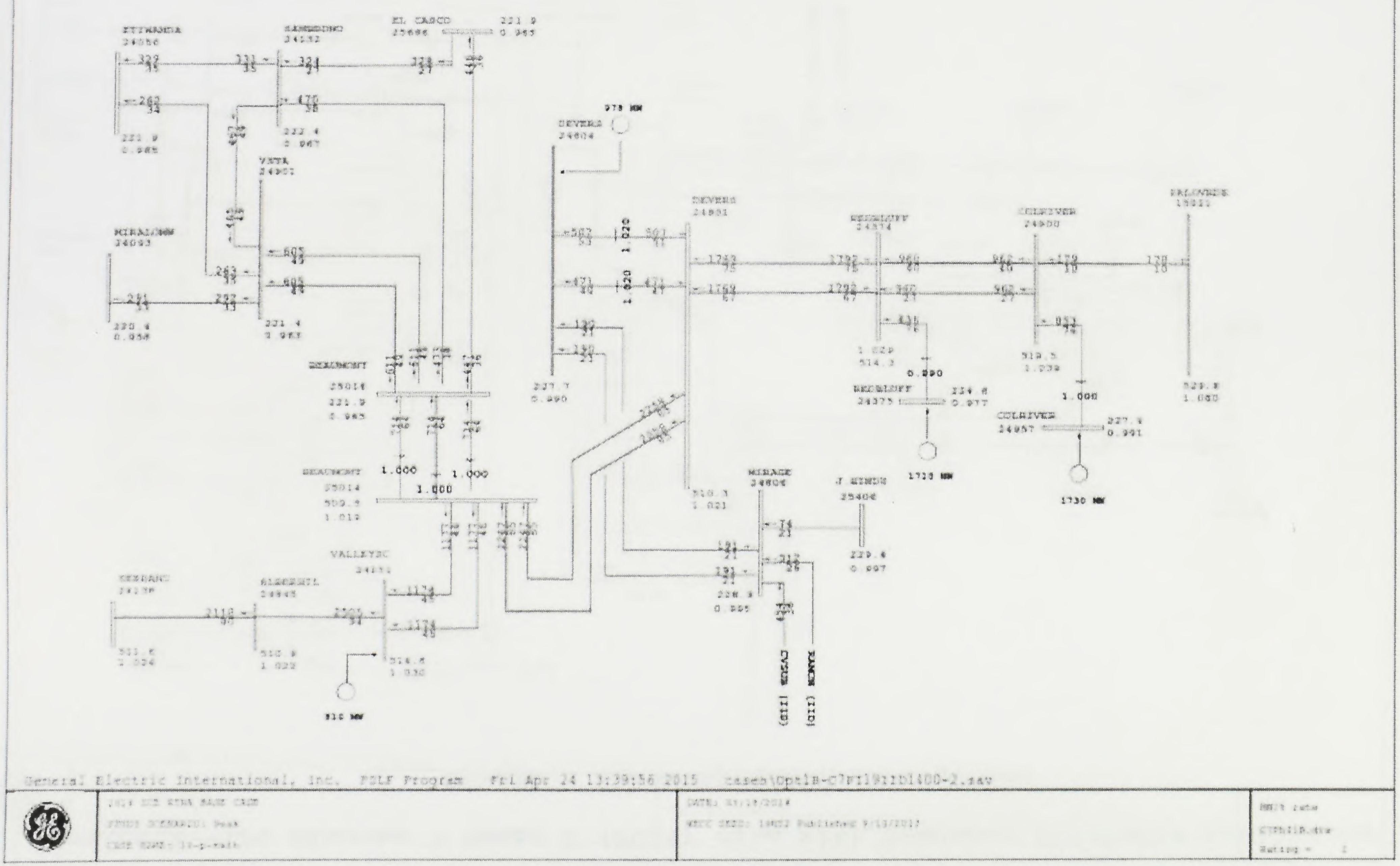
STUDY SCENARIO: Peak

CASE NAME: 24-p-main

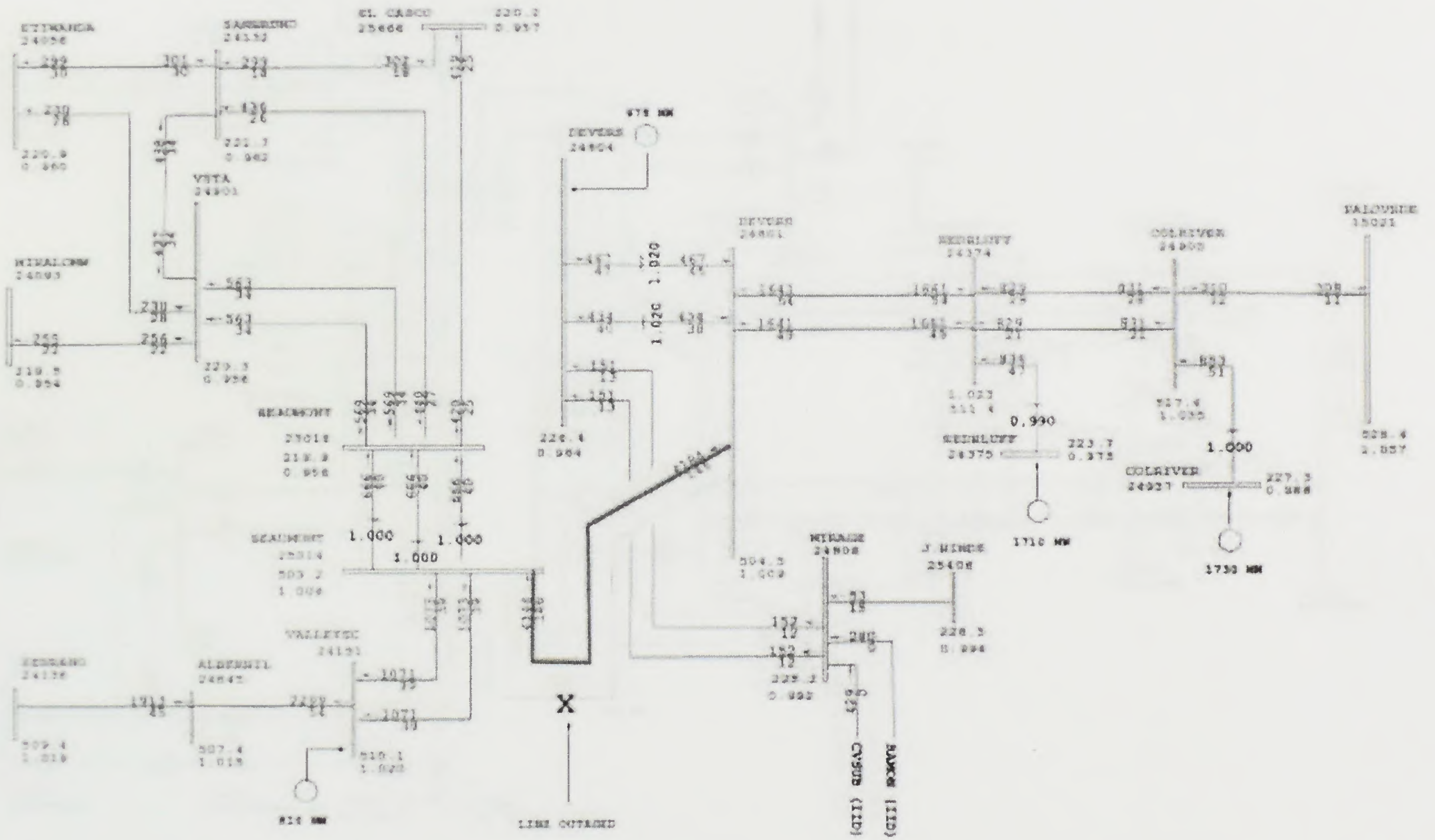
Rating = 2

Option1B--ISO Cluster 7 Phase I (2019) case with Beaumont 230/500kV Substation



Option1B--ISO Cluster 7 Phase I (2019) case with Beaumont 230/500kV Substation

Devers - Beaumont 500kV line #2 out



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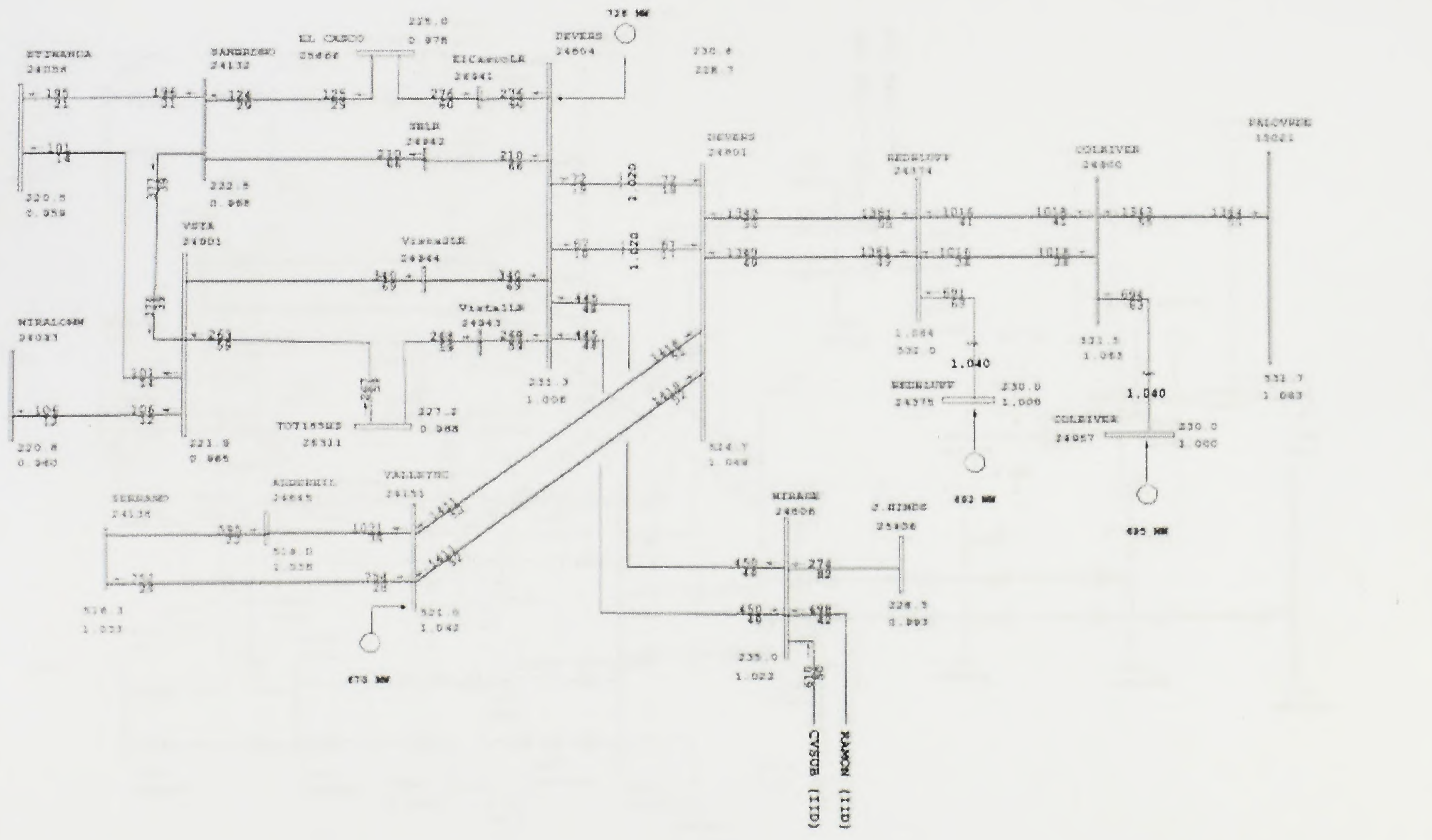
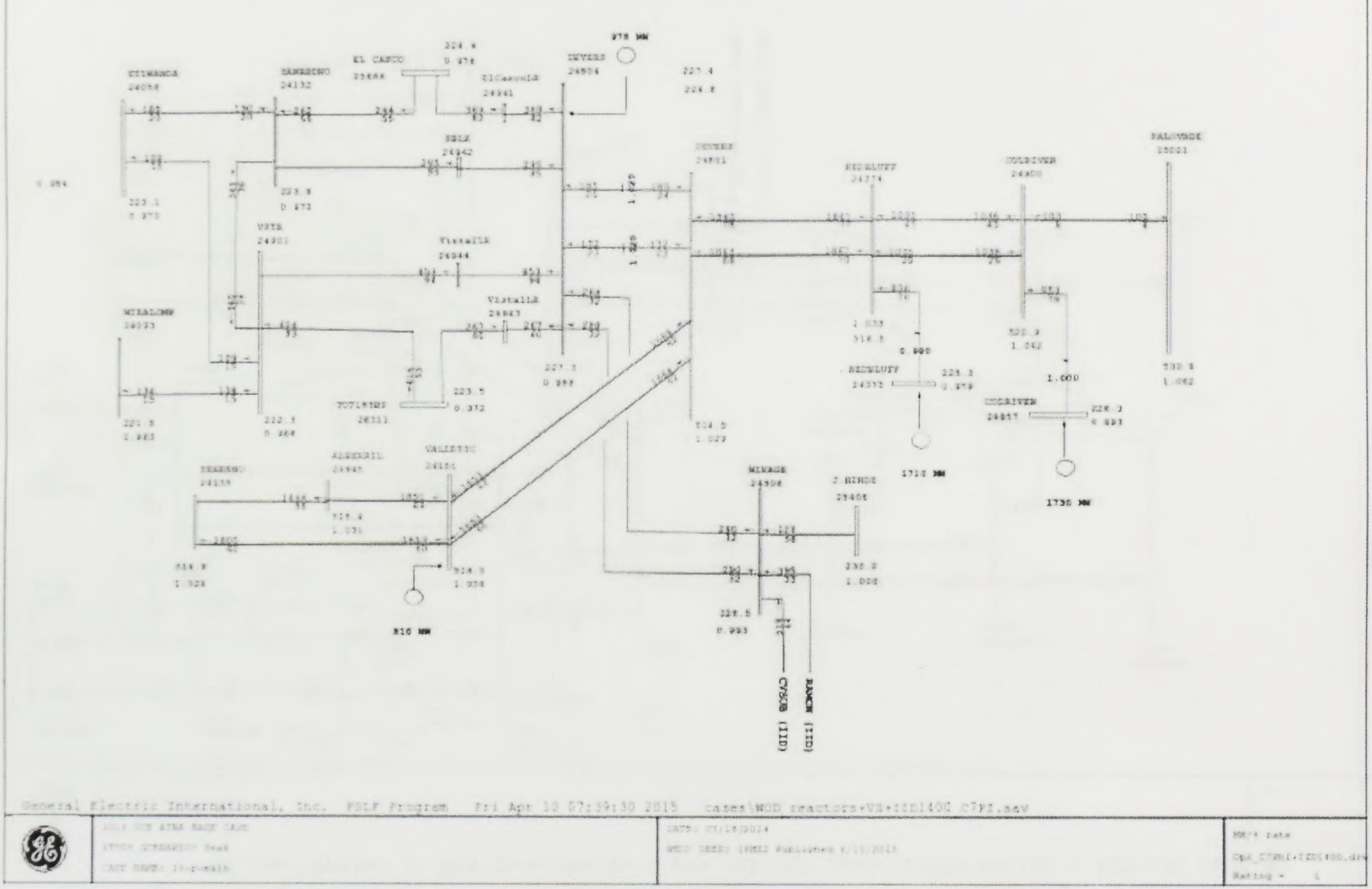
No Proj Option 2--Existing System + New VAL-SER line--ISO24 Reliab + IID-ISO 1400 MW



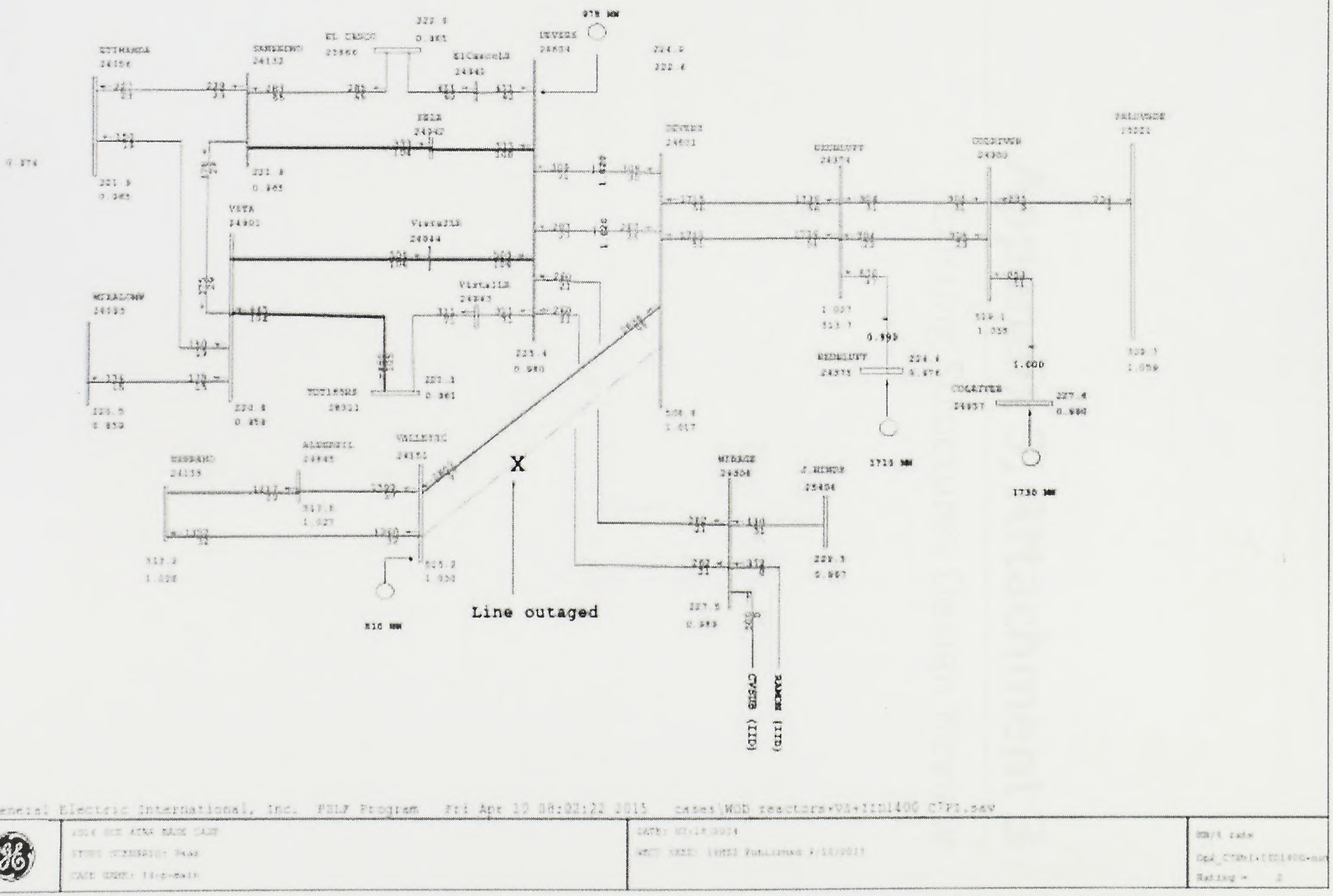
No Proj Option 2--Existing System + New VAL-SER line--ISO C7PhI + IID-ISO 1400 MW



1730 MW
810 MW
1.000
RAMON (IID)
CVSUB (IID)
General Electric International, Inc. PSLF Program Fri Apr 10 07:39:30 2015 cases\WOD reactors+VS+IID1400 C7PI.sav

No Proj Option 2--Existing System + New VAL-SER line--ISO C7PhI + IID-ISO 1400 MW

Devers - Valley 500 kV line #2 out



Appendix 5, Attachment 3

Existing Structures Design Review

PhaseLine LLC
phaselinellc@gmail.com · 206.313.3663
Engineering Concepts & Options

Memorandum

To: Brewster Birdsall
Susan Lee

From: Chuck Williams

Subject: WODUP Existing Line Design Review Comments

Date: March 27, 2015

Following are comments from my review and comparison of information provided by SCE related to the design of the existing double circuit transmission line and the potential use of the existing structures to support alternative conductors. The review considered the use of three potential alternative High-Temperature Low-Sag (HTLS) conductors that can be operated at 464° F in order to maximize power flow under emergency operating conditions (N-2). This review evaluated Dove 557 ACCR, Drake 795 ACCR and Curlew 1033 ACCR to determine how they would perform if installed on the existing towers.

Existing Conductor Clearance Review

SCE indicates that the rated normal and emergency operating temperature for the existing lines is 201° F (response ALT-21b) and they note that at this temperature the existing single-conductor Curlew 1033.5 ACSR has two spans with existing clearance infractions that were identified and reported in 2010 (response ALT-21c). The sag-tension information provided by SCE for the 201° F condition was used as the basis of the clearance review of the alternative conductors.

Alternative Conductor Clearance Review

To simplify the analysis, the clearance review evaluated the sag in each of the ruling spans within the existing line, as opposed to reviewing the actual ground clearance in each individual existing span. This approach is expected to provide somewhat conservative results since some existing spans may have ground clearance in excess of code requirements.

Referring to Table-1 Sag-Clearance Comparison, it appears that of the three conductors evaluated, only the Drake 795 ACCR would be a suitable alternative conductor that could be installed on the existing towers with minimal clearance issues. This scenario results in a potential 3 spans with clearance violations, the two existing violations noted in SCE response ALT-21c and possibly a violation for the 356 ft. Ruling Span.

Table-1 further illustrates that Dove 557 ACCR is not a suitable alternative conductor as the analysis indicates a significant number of ruling spans where Dove exceeds the existing conductor sag by half a foot or more. This may be counter intuitive since Dove is a smaller and lighter conductor than the existing Curlew ACSR, however, Dove's weight to strength characteristics appear to be less favorable.

Curlew 1033 ACCR exceeds the existing conductor sag by multiple feet for most spans. For even larger ACCR conductors, such as Bittern 1272 ACCR, their sags exceed the existing conductor sag by five feet or more.

Original Design, Strength Review:

SCE indicates that the existing line design was based upon the GO 95 Light Loading condition that was in effect in 1975. This design utilized a physical loading condition of 25° F conductor temperature and an 8 pounds-per-square-foot (PSF) wind loading for all segments of the line.

SCE's original line design condition results in a maximum tension for the Curlew ACSR of approximately 12,000 pounds. Since over 70% of the existing line structures are tangent structures, the strength review focused on these structures. Table-2, Tangent Original Design, summarizes the capability of SCE's standard tangent structure types to support various conductors, for the ruling spans in the existing line.

Tangent tower types "O" and "N/NE" are utilized on segments 1 & 2 with tangent tower types "WC" & "WB" utilized on segments 2 and 3 through 6.

A review of existing structure data determined that tower types O and N/NE in segments 1 and 2 had sufficient strength to support the single 1033.5 ACSR conductor when the line was constructed. Similarly, tower types WC and WB were okay for all ruling spans in segments 3 through 6, except the long Whitewater crossing, which was supported by deadend towers.

From a further review of Table-2, Tangent Original Design, it appears that the double-bundle Curlew ACSR proposed as a part of the original DPV2 Project would have been suitable on the majority of the existing structures under an 8 PSF design condition. A cursory review of information from SCE on the actual structure types in the existing line, finds that approximately 3 to 4 Type O towers and 3 to 4 Type NE towers could have been overloaded in Segments 1 and 2 under this scenario.

SCE Updated Design Requirements, Strength Review:

SCE's response for ALT-18a indicates that a Project-specific meteorological study was performed in 2011 and as a result, any new construction or any re-conductor of the existing towers would be subject to greater design wind conditions than were used for the original design. These new design conditions are 12 PSF for Segments 1, 4, 5, and 6, 18 PSF for Segment 2, and 16 PSF for Segment 3.

SCE's proposed project utilizes double-bundle Lapwing 1590 ACSR conductor. Based on the sag-tension data provided by SCE and the analysis of conductors smaller than 2B-1590 it is readily inferred that the existing towers do not have sufficient height to maintain required ground clearances and are not sufficiently strong to support the larger conductor.

Alternative Design Strength Review:

Tables 3, 4 and 5 summarize the strength review for Tangent structures for 12 PSF, 16 PSF and 18 PSF wind loadings respectively. From these tables there are many ruling spans where the existing structures would be overloaded. However, combining the information in these tables with the information from SCE on the actual structure types in the existing line yields the following results:

1. It appears that the many of existing structures generally have sufficient strength to support a single Drake 795 ACCR conductor for all line segments. Under this scenario at least a dozen tangent structures in Segment 2 would likely need to be replaced. This seems consistent with the information in SCE's response to ALT-18a that indicates roughly 30% of all structure types in the existing line would be overloaded.

2. The use of a larger single alternative conductor such as Curlew 1033 ACCR or double-bundle Drake 795 ACCR conductor was found infeasible due to the large number of structures that would be overloaded. Again this is consistent with the information in SCE's response to ALT-18a that indicates roughly 45% of all structure types in the existing line would be overloaded with double-bundle Drake 795 ACCR.

When considering an alternative that utilizes the existing line with some structure modifications or replacements it should be noted that this construction would likely include shoo-flies and other arrangements to help brace structures or to temporarily support conductors. Therefore, the ground disturbance associated with each tower replacement will be greater than that for a new tower. A very rough approximation is that replacement of an existing tower could result in 150% to 175% of the disturbance related to a new structure installation. Based on this relative difference in ground disturbance it may be reasonable to utilize an alternative that entails 30-35% structure replacements as this will still have an overall less impact than constructing an entirely new line. For alternatives with higher percentages of replacements this concept becomes more tenable.

WODUP Existing Line/Alternative Use Review

TABLE-1 Sag-Clearance Check

Sag Comparison

Exisiting 1033.5 ACSR "Curlew" Conductor
Alternative New 795 ACCR "Drake" Conductor

33 Different Ruling Span sections in existing line.

Drake

Ruling Span Ft.	Exist 1033.5 ACSR 201 F Max Sag Ft.	New 795 ACCR 464 F Max Sag Ft.	Max Sag Difference
1165	32.80	32.52	0.28
1428	44.62	44.14	0.48
4119	285.83	257.92	27.91
1656	56.80	55.45	1.35
1384	42.49	42.09	0.40
1263	36.94	36.67	0.27
1434	44.92	44.42	0.50
1630	55.33	54.1	1.23
1596	53.44	53.36	0.08
1568	51.91	50.95	0.96
1286	37.95	37.68	0.27
1328	39.84	39.54	0.30
1557	51.31	50.39	0.92
1544	50.61	49.75	0.86
1823	66.66	64.48	2.18
1792	64.77	62.76	2.01
1868	69.45	67.02	2.43
1874	69.83	67.37	2.46
1609	54.16	53.02	1.14
527	11.00	10.96	0.04
1477	47.07	46.47	0.60
853	21.07	20.97	0.10
1199	34.21	33.94	0.27
2222	93.39	88.67	4.72
1045	28.03	27.79	0.24
1313	39.14	38.87	0.27
665	15.04	14.95	0.09
1145	31.98	31.7	0.28
972	25.28	25.12	0.16
972	25.28	25.12	0.16
962	24.92	24.76	0.16
674	15.31	15.22	0.09
356	6.18	6.57	-0.39

Exisiting 1033.5 ACSR "Curlew" Conductor
Alternative New 557 ACCR "Dove" Conductor

Dove

Ruling Span Ft.	Exist 1033.5 ACSR 201 F Max Sag Ft.	New 557 ACCR 464 F Max Sag Ft.	Max Sag Difference
1165	32.80	33.36	-0.56
1428	44.62	45.37	-0.75
4119	285.83	269.15	16.68
1656	56.80	57.1	-0.30
1384	42.49	43.25	-0.76
1263	36.94	37.65	-0.71
1434	44.92	45.67	-0.75
1630	55.33	55.7	-0.37
1596	53.44	53.9	-0.46
1568	51.91	52.43	-0.52
1286	37.95	38.69	-0.74
1328	39.84	40.62	-0.78
1557	51.31	51.86	-0.55
1544	50.61	51.19	-0.58
1823	66.66	66.48	0.18
1792	64.77	64.69	0.08
1868	69.45	69.12	0.33
1874	69.83	69.48	0.35
1609	54.16	54.58	-0.42
527	11.00	11.14	-0.14
1477	47.07	47.79	-0.72
853	21.07	21.24	-0.17
1199	34.21	34.83	-0.62
2222	93.39	91.66	1.73
1045	28.03	28.42	-0.39
1313	39.14	39.92	-0.78
665	15.04	15.17	-0.13
1145	31.98	32.52	-0.54
972	25.28	25.57	-0.29
972	25.28	25.57	-0.29
962	24.92	25.18	-0.26
674	15.31	15.45	-0.14
356	6.18	6.68	-0.50

Exisiting 1033.5 ACSR "Curlew" Conductor
Alternative New 1033 ACCR "Curlew" Conductor

Curlew

Ruling Span Ft.	Exist 1033.5 ACSR 201 F Max Sag Ft.	New 1033 ACCR 464 F Max Sag Ft.	Max Sag Difference
1165	32.80	35.29	-2.49
1428	44.62	47.94	-3.32
4119	285.83	283.31	2.52
1656	56.80	60.28	-3.48
1384	42.49	45.71	-3.22
1263	36.94	39.81	-2.87
1434	44.92	48.25	-3.33
1630	55.33	58.81	-3.48
1596	53.44	56.91	-3.47
1568	51.91	55.36	-3.45
1286	37.95	40.9	-2.95
1328	39.84	42.93	-3.09
1557	51.31	54.76	-3.45
1544	50.61	54.06	-3.45
1823	66.66	70.15	-3.49
1792	64.77	68.26	-3.49
1868	69.45	72.93	-3.48
1874	69.83	73.3	-3.47
1609	54.16	57.63	-3.47
527	11.00	11.61	-0.61
1477	47.07	50.48	-3.41
853	21.07	22.44	-1.37
1199	34.21	36.83	-2.62
2222	93.39	96.63	-3.24
1045	28.03	30.07	-2.04
1313	39.14	42.2	-3.06
665	15.04	15.87	-0.83
1145	31.98	34.4	-2.42
972	25.28	27.07	-1.79
972	25.28	27.07	-1.79
962	24.92	26.67	-1.75
674	15.31	16.16	-0.85
356	6.18	6.94	-0.76

ACCR sag less than existing conductor, no clearance issues

ACCR sag very nearly the same as existing conductor, within 6 inches, clearance issues less likely

ACCR Sag greater than existing conductor likely clearance issues

WODUP Existing Line/Alternative Use Review

TABLE-2 Tangent Original Design (8PSF)

StructureTransverse Load from Conductor

	Dove ACCR	Drake ACCR	Curlew ACSR	Curlew ACCR	OPGW
Dia inches	0.941	1.128	1.244	1.247	0.69
Weight lbs	0.65	0.93	1.33	1.13	
Wind area, sq ft	0.078	0.094	0.104	0.104	0.058
Max Ten, lbs	8,085	11,270	12,810	12,000	

Transverse loading is calculated at each phase position

Wind Pressure = 8

Wind Speed 56 mph

	Transverse Wind Load, Lbs.						
Ruling Span Ft.	Exist 1033.5 ACSR Curlew	2B-1033.5 ACSR Curlew	New 557 ACCR Dove	New 795 ACCR Drake	New 28-557 ACCR Dove	New 2B-795 ACCR Drake	New 1033.5 ACCR Curlew
1165	966	1,932	731	876	1,462	1,752	969
1428	1,184	2,369	896	1,074	1,792	2,148	1,187
4119	3,416	6,832	2,584	3,097	5,168	6,195	3,424
1656	1,373	2,747	1,039	1,245	2,078	2,491	1,377
1384	1,148	2,296	868	1,041	1,736	2,082	1,151
1263	1,047	2,095	792	950	1,585	1,900	1,050
1434	1,189	2,379	900	1,078	1,799	2,157	1,192
1630	1,352	2,704	1,023	1,226	2,045	2,452	1,355
1596	1,324	2,647	1,001	1,200	2,002	2,400	1,327
1568	1,300	2,601	984	1,179	1,967	2,358	1,304
1286	1,067	2,133	807	967	1,614	1,934	1,069
1328	1,101	2,203	833	999	1,666	1,997	1,104
1557	1,291	2,583	977	1,171	1,954	2,342	1,294
1544	1,280	2,561	969	1,161	1,937	2,322	1,284
1823	1,512	3,024	1,144	1,371	2,287	2,742	1,516
1792	1,486	2,972	1,124	1,348	2,248	2,695	1,490
1868	1,549	3,098	1,172	1,405	2,344	2,809	1,553
1874	1,554	3,108	1,176	1,409	2,351	2,818	1,558
1609	1,334	2,669	1,009	1,210	2,019	2,420	1,338
527	437	874	331	396	661	793	438
1477	1,225	2,450	927	1,111	1,853	2,221	1,228
853	707	1,415	535	641	1,070	1,283	709
1199	994	1,989	752	902	1,504	1,803	997
2222	1,843	3,686	1,394	1,671	2,788	3,342	1,847
1045	867	1,733	656	786	1,311	1,572	869
1313	1,089	2,178	824	987	1,647	1,975	1,092
665	552	1,103	417	500	834	1,000	553
1145	950	1,899	718	861	1,437	1,722	952
972	806	1,612	610	731	1,220	1,462	808
972	806	1,612	610	731	1,220	1,462	808
962	798	1,596	603	723	1,207	1,447	800
674	559	1,118	423	507	846	1,014	560
356	295	590	223	268	447	535	296

2.5 Line Angle Transverse Load, Lbs.						
Exist 1033.5 ACSR Curlew	28-1033.5 ACSR Curlew	New 557 ACCR Dove	New 795 ACCR Drake	New 28-557 ACCR Dove	New 28-795 ACCR Drake	New 1033.5 ACCR Curlew
559	1,118	353	492	705	983	524

Type O TAN Twr, Segments 1 & 2

Tran Limit 1400

Vert Limit 2400

TABLE-2 Tangent Original Design (BPSF)

	Wind Transverse Load Check													
	ACSR Curlew		ACSR 2B-Curlew		ACCR Dove		ACCR Drake		ACCR 2B-Dove		ACCR 2B-Drake		ACCR Curlew	
Ruling Span Ft.	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical
1165	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1428	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	N	Y	Y
4119	N	N	N	N	N	N	N	N	N	N	N	N	N	N
1656	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	N	Y	Y
1384	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	N	Y	Y
1263	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1434	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	N	Y	Y
1630	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	N	Y	Y
1596	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	N	Y	Y
1568	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	N	Y	Y
1286	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1328	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	N	Y	Y
1557	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	N	Y	Y
1544	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	N	Y	Y
1823	N	N	N	N	Y	Y	Y	Y	N	Y	N	N	N	Y
1792	N	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	Y
1868	N	N	N	N	Y	Y	N	Y	N	N	N	N	N	Y
1874	N	N	N	N	Y	Y	N	Y	N	N	N	N	N	Y
1609	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	N	Y	Y
527	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1477	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	N	Y	Y
853	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1199	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	Y	Y	Y
2222	N	N	N	N	Y	Y	N	Y	N	N	N	N	N	N
1045	Y	Y	N	N	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
1313	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	N	Y	Y
665	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1145	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	Y	Y	Y
972	Y	Y	N	N	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
972	Y	Y	N	N	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
962	Y	Y	N	N	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
674	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
356	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Type N/NE TAN Twr, Segments 1 & 2	Tran Limit	Vert Limit	TABLE-2 Tangent Original Design (8PSF)
	2800	3000	Wind Pressure = 8

	Wind Transverse Load Check													
	ACSR Curlew		ACSR 2B-Curlew		ACCR Dove		ACCR Drake		ACCR 2B-Dove		ACCR 2B-Drake		ACCR Curlew	
Ruling Span Ft.	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical
1165	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1428	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
4119	N	N	N	N	Y	Y	N	N	N	N	N	N	N	N
1656	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y
1384	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1263	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1434	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1630	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y
1596	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1568	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1286	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1328	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1557	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1544	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1823	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y
1792	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y
1868	Y	Y	N	N	Y	Y	Y	Y	Y	Y	N	N	Y	Y
1874	Y	Y	N	N	Y	Y	Y	Y	Y	Y	N	N	Y	Y
1609	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
527	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1477	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
853	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1199	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
2222	Y	Y	N	N	Y	Y	Y	Y	Y	Y	N	N	Y	Y
1045	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1313	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
665	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1145	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
972	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
972	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
962	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
674	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
356	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Types WC & WB TAN Twr, Segments 3 thru 6

Tran Limit 4400

Vert Limit 9000

TABLE-2 Tangent Original Design (8PSF)

	Wind + 2.5 Angle Transverse Load Check													
	ACSR Curlew		ACSR 2B-Curlew		ACCR Dove		ACCR Drake		ACCR 2B-Dove		ACCR 2B-Drake		ACCR Curlew	
Ruling Span Ft.	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical
1165	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1428	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
4119	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1656	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1384	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1263	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1434	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1630	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1596	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1568	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1286	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1328	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1557	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1544	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1823	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1792	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1868	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1874	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1609	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
527	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1477	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
853	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1199	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
2222	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1045	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1313	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
665	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1145	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
972	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
972	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
962	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
674	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
356	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

WODUP Existing Line/Alternative Use Review

TABLE-3 Tangent Design 12 PSF

StructureTransverse Load from Conductor

	Dove ACCR	Drake ACCR	Curlew ACSR	Curlew ACCR	OPGW
Dia inches	0.941	1.128	1.244	1.247	0.69
Weight lbs	0.65	0.93	1.33	1.13	
Wind area, sq ft	0.078	0.094	0.104	0.104	0.058
Max Ten, lbs	8,085	11,270	12,810	12,000	

Transverse loading is calculated at each phase position

Wind Pressure = 12

Wind Speed 68 mph

	Transverse Wind Load, Lbs.						
Ruling Span Ft.	Exist 1033.5 ACSR Curlew	28-1033.5 ACSR Curlew	New 557 ACCR Dove	New 795 ACCR Drake	New 28-557 ACCR Dove	New 28-795 ACCR Drake	New 1033.5 ACCR Curlew
1165	1,449	2,899	1,096	1,314	2,193	2,628	1,453
1428	1,776	3,553	1,344	1,611	2,687	3,222	1,781
4119	5,124	10,248	3,876	4,646	7,752	9,292	5,136
1656	2,060	4,120	1,558	1,868	3,117	3,736	2,065
1384	1,722	3,443	1,302	1,561	2,605	3,122	1,726
1263	1,571	3,142	1,188	1,425	2,377	2,849	1,575
1434	1,784	3,568	1,349	1,618	2,699	3,235	1,788
1630	2,028	4,055	1,534	1,839	3,068	3,677	2,033
1596	1,985	3,971	1,502	1,800	3,004	3,601	1,990
1568	1,951	3,901	1,475	1,769	2,951	3,537	1,955
1286	1,600	3,200	1,210	1,451	2,420	2,901	1,604
1328	1,652	3,304	1,250	1,498	2,499	2,996	1,656
1557	1,937	3,874	1,465	1,756	2,930	3,513	1,942
1544	1,921	3,841	1,453	1,742	2,906	3,483	1,925
1823	2,268	4,536	1,715	2,056	3,431	4,113	2,273
1792	2,229	4,458	1,686	2,021	3,373	4,043	2,235
1868	2,324	4,648	1,758	2,107	3,516	4,214	2,329
1874	2,331	4,663	1,763	2,114	3,527	4,228	2,337
1609	2,002	4,003	1,514	1,815	3,028	3,630	2,006
527	656	1,311	496	594	992	1,189	657
1477	1,837	3,675	1,390	1,666	2,780	3,332	1,842
853	1,061	2,122	803	962	1,605	1,924	1,064
1199	1,492	2,983	1,128	1,352	2,257	2,705	1,495
2222	2,764	5,528	2,091	2,506	4,182	5,013	2,771
1045	1,300	2,600	983	1,179	1,967	2,358	1,303
1313	1,633	3,267	1,236	1,481	2,471	2,962	1,637
665	827	1,655	626	750	1,252	1,500	829
1145	1,424	2,849	1,077	1,292	2,155	2,583	1,428
972	1,209	2,418	915	1,096	1,829	2,193	1,212
972	1,209	2,418	915	1,096	1,829	2,193	1,212
962	1,197	2,393	905	1,085	1,810	2,170	1,200
674	838	1,677	634	760	1,268	1,521	840
356	443	886	335	402	670	803	444

2.5 Line Angle Transverse Load, Lbs.						
Exist 1033.5 ACSR Curlew	28-1033.5 ACSR Curlew	New 557 ACCR Dove	New 795 ACCR Drake	New 28-557 ACCR Dove	New 28-795 ACCR Drake	New 1033.5 ACCR Curlew
559	1,118	353	492	705	983	524

Type O TAN Twr, Segments 1 & 2

Tran Limit* 1260

Vert Limit 2400

TABLE-3 Tangent Design 12 PSF

*Transverse load limit at phase positions adjusted due to additional wind on structure.

	Wind Transverse Load Check													
	ACSR Curlew		ACSR 28-Curlew		ACCR Dove		ACCR Drake		ACCR 2B-Dove		ACCR 2B-Drake		ACCR Curlew	
Ruling Span Ft.	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical
1165	N	Y	N	N	Y	Y	N	Y	N	Y	N	Y	N	Y
1428	N	Y	N	N	N	Y	N	Y	N	Y	N	N	N	Y
4119	N	N	N	N	N	N	N	N	N	N	N	N	N	N
1656	N	Y	N	N	N	Y	N	Y	N	Y	N	N	N	Y
1384	N	Y	N	N	N	Y	N	Y	N	Y	N	N	N	Y
1263	N	Y	N	N	Y	Y	N	Y	N	Y	N	Y	N	Y
1434	N	Y	N	N	N	Y	N	Y	N	Y	N	N	N	Y
1630	N	Y	N	N	N	Y	N	Y	N	Y	N	N	N	Y
1596	N	Y	N	N	N	Y	N	Y	N	Y	N	N	N	Y
1568	N	Y	N	N	N	Y	N	Y	N	Y	N	N	N	Y
1286	N	Y	N	N	Y	Y	N	Y	N	Y	N	Y	N	Y
1328	N	Y	N	N	Y	Y	N	Y	N	Y	N	N	N	Y
1557	N	Y	N	N	N	Y	N	Y	N	Y	N	N	N	Y
1544	N	Y	N	N	N	Y	N	Y	N	Y	N	N	N	Y
1823	N	N	N	N	N	Y	N	Y	N	Y	N	N	N	Y
1792	N	Y	N	N	N	Y	N	Y	N	Y	N	N	N	Y
1868	N	N	N	N	N	Y	N	Y	N	N	N	N	N	Y
1874	N	N	N	N	N	Y	N	Y	N	N	N	N	N	Y
1609	N	Y	N	N	N	Y	N	Y	N	Y	N	N	N	Y
527	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1477	N	Y	N	N	N	Y	N	Y	N	Y	N	N	N	Y
853	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1199	N	Y	N	N	Y	Y	N	Y	N	Y	N	Y	N	Y
2222	N	N	N	N	N	Y	N	Y	N	N	N	N	N	N
1045	N	Y	N	N	Y	Y	Y	Y	N	Y	N	Y	N	Y
1313	N	Y	N	N	Y	Y	N	Y	N	Y	N	N	N	Y
665	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
1145	N	Y	N	N	Y	Y	N	Y	N	Y	N	Y	N	Y
972	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	Y	Y	Y
972	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	Y	Y	Y
962	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	Y	Y	Y
674	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y
356	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Type N/NE TAN Twr, Segments 1 & 2

Tran Limit*	Vert Limit
2520	3000

TABLE-3 Tangent Design 12 PSF

*Transverse load limit at phase positions adjusted due to additional wind on structure.

	Wind Transverse Load Check													
	ACSR Curlew		ACSR 2B-Curlew		ACCR Dove		ACCR Drake		ACCR 2B-Dove		ACCR 2B-Drake		ACCR Curlew	
Ruling Span Ft.	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical
1165	Y	Y	N	N	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
1428	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	Y	Y	Y
4119	N	N	N	N	N	Y	N	N	N	N	N	N	N	N
1656	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	N	Y	Y
1384	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1263	Y	Y	N	N	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
1434	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1630	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	N	Y	Y
1596	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1568	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1286	Y	Y	N	N	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
1328	Y	Y	N	N	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
1557	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1544	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1823	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	N	Y	Y
1792	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	N	Y	Y
1868	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	N	Y	Y
1874	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	N	Y	Y
1609	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	Y	Y	Y
527	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1477	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	Y	Y	Y
853	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1199	Y	Y	N	N	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
2222	N	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	Y
1045	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1313	Y	Y	N	N	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
665	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1145	Y	Y	N	N	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
972	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
972	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
962	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
674	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
356	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Types WC & WB TAN Twr, Segments 3 thru 6

Tran Limit* 3960

Vert Limit 9000

TABLE-3 Tangent Design 12 PSF

*Transverse load limit at phase positions adjusted due to additional wind on structure.

	Wind + 2.5 Angle Transverse Load Check													
	ACSR Curlew		ACSR 2B-Curlew		ACCR Dove		ACCR Drake		ACCR 2B-Dove		ACCR 2B-Drake		ACCR Curlew	
Ruling Span Ft.	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical
1165	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1428	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
4119	N	Y	N	N	N	Y	N	Y	N	Y	N	Y	N	Y
1656	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
1384	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
1263	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1434	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
1630	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
1596	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
1568	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
1286	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1328	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
1557	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
1544	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
1823	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1792	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1868	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1874	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1609	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
527	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1477	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
853	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1199	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
2222	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1045	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1313	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
665	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1145	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
972	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
972	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
962	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
674	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
356	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

WODUP Existing Line/Alternative Use Review **TABLE-4 Tangent Design 16 PSF**

StructureTransverse Load from Conductor

	Dove ACCR	Drake ACCR	Curlew ACSR	Curlew ACCR	OPGW
Dia inches	0.941	1.128	1.244	1.247	0.69
Weight lbs	0.65	0.93	1.33	1.13	
Wind area, sq ft	0.078	0.094	0.104	0.104	0.058
Max Ten, lbs	8,085	11,270	12,810	12,000	

Transverse loading is calculated at each phase position

Wind Pressure = 16 Wind Speed 79 mph

	Transverse Wind Load, Lbs.						
Ruling Span Ft.	Exist 1033.5 ACSR Curlew	28-1033.5 ACSR Curlew	New 557 ACCR Dove	New 795 ACCR Drake	New 28-557 ACCR Dove	New 28-795 ACCR Drake	New 1033.5 ACCR Curlew
1165	1,932	3,865	1,462	1,752	2,923	3,504	1,937
1428	2,369	4,737	1,792	2,148	3,583	4,295	2,374
4119	6,832	13,664	5,168	6,195	10,336	12,390	6,849
1656	2,747	5,494	2,078	2,491	4,155	4,981	2,753
1384	2,296	4,591	1,736	2,082	3,473	4,163	2,301
1263	2,095	4,190	1,585	1,900	3,169	3,799	2,100
1434	2,379	4,757	1,799	2,157	3,598	4,313	2,384
1630	2,704	5,407	2,045	2,452	4,090	4,903	2,710
1596	2,647	5,294	2,002	2,400	4,005	4,801	2,654
1568	2,601	5,202	1,967	2,358	3,935	4,717	2,607
1286	2,133	4,266	1,614	1,934	3,227	3,868	2,138
1328	2,203	4,405	1,666	1,997	3,332	3,995	2,208
1557	2,583	5,165	1,954	2,342	3,907	4,683	2,589
1544	2,561	5,122	1,937	2,322	3,874	4,644	2,567
1823	3,024	6,047	2,287	2,742	4,575	5,484	3,031
1792	2,972	5,945	2,248	2,695	4,497	5,390	2,979
1868	3,098	6,197	2,344	2,809	4,687	5,619	3,106
1874	3,108	6,217	2,351	2,818	4,702	5,637	3,116
1609	2,669	5,338	2,019	2,420	4,038	4,840	2,675
527	874	1,748	661	793	1,322	1,585	876
1477	2,450	4,900	1,853	2,221	3,706	4,443	2,456
853	1,415	2,830	1,070	1,283	2,140	2,566	1,418
1199	1,989	3,977	1,504	1,803	3,009	3,607	1,994
2222	3,686	7,371	2,788	3,342	5,576	6,684	3,694
1045	1,733	3,467	1,311	1,572	2,622	3,143	1,737
1313	2,178	4,356	1,647	1,975	3,295	3,950	2,183
665	1,103	2,206	834	1,000	1,669	2,000	1,106
1145	1,899	3,798	1,437	1,722	2,873	3,444	1,904
972	1,612	3,224	1,220	1,462	2,439	2,924	1,616
972	1,612	3,224	1,220	1,462	2,439	2,924	1,616
962	1,596	3,191	1,207	1,447	2,414	2,894	1,599
674	1,118	2,236	846	1,014	1,691	2,027	1,121
356	590	1,181	447	535	893	1,071	592

2.5 Line Angle Transverse Load, Lbs.						
Exist 1033.5 ACSR Curlew	28-1033.5 ACSR Curlew	New 557 ACCR Dove	New 795 ACCR Drake	New 28-557 ACCR Dove	New 28-795 ACCR Drake	New 1033.5 ACCR Curlew
559	1,118	353	492	705	983	524

Type O TAN Twr, Segments 1 & 2

Tran Limit* 1260

Vert Limit 2400

TABLE-4 Tangent Design 16 PSF

*Transverse load limit at phase positions adjusted due to additional wind on structure.

	Wind Transverse Load Check													
	ACSR Curlew		ACSR 28-Curlew		ACCR Dove		ACCR Drake		ACCR 28-Dove		ACCR 28-Drake		ACCR Curlew	
Ruling Span Ft.	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical
1165	N	Y	N	N	N	Y	N	Y	N	Y	N	Y	N	Y
1428	N	Y	N	N	N	Y	N	Y	N	Y	N	N	N	Y
4119	N	N	N	N	N	N	N	N	N	N	N	N	N	N
1656	N	Y	N	N	N	Y	N	Y	N	Y	N	N	N	Y
1384	N	Y	N	N	N	Y	N	Y	N	Y	N	N	N	Y
1263	N	Y	N	N	N	Y	N	Y	N	Y	N	Y	N	Y
1434	N	Y	N	N	N	Y	N	Y	N	Y	N	N	N	Y
1630	N	Y	N	N	N	Y	N	Y	N	Y	N	N	N	Y
1596	N	Y	N	N	N	Y	N	Y	N	Y	N	N	N	Y
1568	N	Y	N	N	N	Y	N	Y	N	Y	N	N	N	Y
1286	N	Y	N	N	N	Y	N	Y	N	Y	N	Y	N	Y
1328	N	Y	N	N	N	Y	N	Y	N	Y	N	N	N	Y
1557	N	Y	N	N	N	Y	N	Y	N	Y	N	N	N	Y
1544	N	Y	N	N	N	Y	N	Y	N	Y	N	N	N	Y
1823	N	N	N	N	N	Y	N	Y	N	Y	N	N	N	Y
1792	N	Y	N	N	N	Y	N	Y	N	Y	N	N	N	Y
1868	N	N	N	N	N	Y	N	Y	N	N	N	N	N	Y
1874	N	N	N	N	N	Y	N	Y	N	N	N	N	N	Y
1609	N	Y	N	N	N	Y	N	Y	N	Y	N	N	N	Y
527	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1477	N	Y	N	N	N	Y	N	Y	N	Y	N	N	N	Y
853	N	Y	N	Y	Y	Y	N	Y	N	Y	N	Y	N	Y
1199	N	Y	N	N	N	Y	N	Y	N	Y	N	Y	N	Y
2222	N	N	N	N	N	Y	N	Y	N	N	N	N	N	N
1045	N	Y	N	N	N	Y	N	Y	N	Y	N	Y	N	Y
1313	N	Y	N	N	N	Y	N	Y	N	Y	N	N	N	Y
665	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1145	N	Y	N	N	N	Y	N	Y	N	Y	N	Y	N	Y
972	N	Y	N	N	Y	Y	N	Y	N	Y	N	Y	N	Y
972	N	Y	N	N	Y	Y	N	Y	N	Y	N	Y	N	Y
962	N	Y	N	N	Y	Y	N	Y	N	Y	N	Y	N	Y
674	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y
356	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Type N/NE TAN Twr, Segments 1 & 2

Tran Limit* 2520

Vert Limit 3000

TABLE-4 Tangent Design 16 PSF

*Transverse load limit at phase positions adjusted due to additional wind on structure.

	Wind Transverse Load Check													
	ACSR Curlew		ACSR 2B-Curlew		ACCR Dove		ACCR Drake		ACCR 28-Dove		ACCR 28-Drake		ACCR Curlew	
Ruling Span Ft.	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical
1165	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1428	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	Y	Y	Y
4119	N	N	N	N	N	Y	N	N	N	N	N	N	N	N
1656	N	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	Y
1384	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1263	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1434	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1630	N	Y	N	N	Y	Y	Y	Y	N	Y	N	N	N	Y
1596	N	Y	N	N	Y	Y	Y	Y	N	Y	N	Y	N	Y
1568	N	Y	N	N	Y	Y	Y	Y	N	Y	N	Y	N	Y
1286	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1328	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1557	N	Y	N	N	Y	Y	Y	Y	N	Y	N	Y	N	Y
1544	N	Y	N	N	Y	Y	Y	Y	N	Y	N	Y	N	Y
1823	N	Y	N	N	Y	Y	N	Y	N	Y	N	N	N	Y
1792	N	Y	N	N	Y	Y	N	Y	N	Y	N	N	N	Y
1868	N	Y	N	N	Y	Y	N	Y	N	Y	N	N	N	Y
1874	N	Y	N	N	Y	Y	N	Y	N	Y	N	N	N	Y
1609	N	Y	N	N	Y	Y	Y	Y	N	Y	N	Y	N	Y
527	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1477	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	Y	Y	Y
853	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
1199	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	Y	Y	Y
2222	N	Y	N	N	N	Y	N	Y	N	Y	N	N	N	Y
1045	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1313	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	Y	Y	Y
665	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1145	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	Y	Y	Y
972	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
972	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
962	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
674	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
356	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Types WC & WB TAN Twr, Segments 3 thru 6

Tran Limit*	Vert Limit
3960	9000

TABLE-4 Tangent Design 16 PSF

*Transverse load limit at phase positions adjusted due to additional wind on structure.

	Wind + 2.5 Angle Transverse Load Check													
	AC5R Curlew		AC5R 2B-Curlew		ACCR Dove		ACCR Drake		ACCR 2B-Dove		ACCR 2B-Drake		ACCR Curlew	
Ruling Span Ft.	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical
1165	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
1428	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y
4119	N	Y	N	N	N	Y	N	Y	N	Y	N	Y	N	Y
1656	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1384	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1263	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
1434	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1630	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1596	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1568	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1286	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
1328	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1557	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1544	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1823	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1792	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1868	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1874	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1609	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y
527	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1477	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y
853	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1199	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
2222	N	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	N	Y
1045	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
1313	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y
665	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1145	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
972	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
972	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
962	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
674	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
356	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

WODUP Existing Line/Alternative Use Review TABLE-5 Tangent Design 18 PSF

StructureTransverse Load from Conductor

	Dove ACCR	Drake ACCR	Curlew ACSR	Curlew ACCR	OPGW
Dia inches	0.941	1.128	1.244	1.247	0.69
Weight lbs	0.65	0.93	1.33	1.13	
Wind area, sq ft	0.078	0.094	0.104	0.104	0.058
Max Ten, lbs	8,085	11,270	12,810	12,000	

Transverse loading is calculated at each phase position

Wind Pressure = 18 Wind Speed 84 mph

	Transverse Wind Load, Lbs.						
Ruling Span Ft.	Exist 1033.5 ACSR Curlew	2B-1033.5 ACSR Curlew	New 557 ACCR Dove	New 795 ACCR Drake	New 28-557 ACCR Dove	New 28-795 ACCR Drake	New 1033.5 ACCR Curlew
1165	2,174	4,348	1,644	1,971	3,289	3,942	2,179
1428	2,665	5,329	2,016	2,416	4,031	4,832	2,671
4119	7,686	15,372	5,814	6,969	11,628	13,939	7,705
1656	3,090	6,180	2,337	2,802	4,675	5,604	3,098
1384	2,583	5,165	1,954	2,342	3,907	4,683	2,589
1263	2,357	4,714	1,783	2,137	3,565	4,274	2,362
1434	2,676	5,352	2,024	2,426	4,048	4,853	2,682
1630	3,042	6,083	2,301	2,758	4,601	5,516	3,049
1596	2,978	5,956	2,253	2,700	4,506	5,401	2,985
1568	2,926	5,852	2,213	2,653	4,426	5,306	2,933
1286	2,400	4,799	1,815	2,176	3,630	4,352	2,405
1328	2,478	4,956	1,874	2,247	3,749	4,494	2,484
1557	2,905	5,811	2,198	2,634	4,395	5,269	2,912
1544	2,881	5,762	2,179	2,612	4,359	5,225	2,888
1823	3,402	6,803	2,573	3,085	5,146	6,169	3,410
1792	3,344	6,688	2,529	3,032	5,059	6,064	3,352
1868	3,486	6,971	2,637	3,161	5,273	6,321	3,494
1874	3,497	6,994	2,645	3,171	5,290	6,342	3,505
1609	3,002	6,005	2,271	2,722	4,542	5,445	3,010
527	983	1,967	744	892	1,488	1,783	986
1477	2,756	5,512	2,085	2,499	4,170	4,998	2,763
853	1,592	3,183	1,204	1,443	2,408	2,887	1,596
1199	2,237	4,475	1,692	2,029	3,385	4,057	2,243
2222	4,146	8,293	3,136	3,760	6,273	7,519	4,156
1045	1,950	3,900	1,475	1,768	2,950	3,536	1,955
1313	2,450	4,900	1,853	2,222	3,707	4,443	2,456
665	1,241	2,482	939	1,125	1,877	2,250	1,244
1145	2,137	4,273	1,616	1,937	3,232	3,875	2,142
972	1,814	3,628	1,372	1,645	2,744	3,289	1,818
972	1,814	3,628	1,372	1,645	2,744	3,289	1,818
962	1,795	3,590	1,358	1,628	2,716	3,255	1,799
674	1,258	2,515	951	1,140	1,903	2,281	1,261
356	664	1,329	502	602	1,005	1,205	666

2.5 Line Angle Transverse Load, Lbs.						
Exist 1033.5 ACSR Curlew	28-1033.5 ACSR Curlew	New 557 ACCR Dove	New 795 ACCR Drake	New 28-557 ACCR Dove	New 28-795 ACCR Drake	New 1033.5 ACCR Curlew
559	1,118	353	492	705	983	524

Type O TAN Twr, Segments 1 & 2

Tran Limit*	Vert Limit
1260	2400

TABLE-5 Tangent Design 18 PSF

*Transverse load limit at phase positions adjusted due to additional wind on structure.

	Wind Transverse Load Check													
	ACSR Curlew		ACSR 28-Curlew		ACCR Dove		ACCR Drake		ACCR 2B-Dove		ACCR 28-Drake		ACCR Curlew	
Ruling Span Ft.	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical
1165	N	Y	N	N	N	Y	N	Y	N	Y	N	Y	N	Y
1428	N	Y	N	N	N	Y	N	Y	N	Y	N	N	N	Y
4119	N	N	N	N	N	N	N	N	N	N	N	N	N	N
1656	N	Y	N	N	N	Y	N	Y	N	Y	N	N	N	Y
1384	N	Y	N	N	N	Y	N	Y	N	Y	N	N	N	Y
1263	N	Y	N	N	N	Y	N	Y	N	Y	N	Y	N	Y
1434	N	Y	N	N	N	Y	N	Y	N	Y	N	N	N	Y
1630	N	Y	N	N	N	Y	N	Y	N	Y	N	N	N	Y
1596	N	Y	N	N	N	Y	N	Y	N	Y	N	N	N	Y
1568	N	Y	N	N	N	Y	N	Y	N	Y	N	N	N	Y
1286	N	Y	N	N	N	Y	N	Y	N	Y	N	Y	N	Y
1328	N	Y	N	N	N	Y	N	Y	N	Y	N	N	N	Y
1557	N	Y	N	N	N	Y	N	Y	N	Y	N	N	N	Y
1544	N	Y	N	N	N	Y	N	Y	N	Y	N	N	N	Y
1823	N	N	N	N	N	Y	N	Y	N	Y	N	N	N	Y
1792	N	Y	N	N	N	Y	N	Y	N	Y	N	N	N	Y
1868	N	N	N	N	N	Y	N	Y	N	N	N	N	N	Y
1874	N	N	N	N	N	Y	N	Y	N	N	N	N	N	Y
1609	N	Y	N	N	N	Y	N	Y	N	Y	N	N	N	Y
527	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1477	N	Y	N	N	N	Y	N	Y	N	Y	N	N	N	Y
853	N	Y	N	Y	Y	Y	N	Y	N	Y	N	Y	N	Y
1199	N	Y	N	N	N	Y	N	Y	N	Y	N	Y	N	Y
2222	N	N	N	N	N	Y	N	Y	N	N	N	N	N	N
1045	N	Y	N	N	N	Y	N	Y	N	Y	N	Y	N	Y
1313	N	Y	N	N	N	Y	N	Y	N	Y	N	N	N	Y
665	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1145	N	Y	N	N	N	Y	N	Y	N	Y	N	Y	N	Y
972	N	Y	N	N	N	Y	N	Y	N	Y	N	Y	N	Y
972	N	Y	N	N	N	Y	N	Y	N	Y	N	Y	N	Y
962	N	Y	N	N	N	Y	N	Y	N	Y	N	Y	N	Y
674	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	N	Y
356	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Type N/NE TAN Twr, Segments 1 & 2

Tran Limit*	Vert Limit
2520	3000

TABLE-5 Tangent Design 18 PSF

*Transverse load limit at phase positions adjusted due to additional wind on structure.

	Wind Transverse Load Check													
	ACSR Curlew		ACSR 2B-Curlew		ACCR Dove		ACCR Drake		ACCR 28-Dove		ACCR 28-Drake		ACCR Curlew	
Ruling Span Ft.	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical
1165	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1428	N	Y	N	N	Y	Y	Y	Y	N	Y	N	Y	N	Y
4119	N	N	N	N	N	Y	N	N	N	N	N	N	N	N
1656	N	Y	N	N	Y	Y	N	Y	N	Y	N	N	N	Y
1384	N	Y	N	N	Y	Y	Y	Y	N	Y	N	Y	N	Y
1263	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1434	N	Y	N	N	Y	Y	Y	Y	N	Y	N	Y	N	Y
1630	N	Y	N	N	Y	Y	N	Y	N	Y	N	N	N	Y
1596	N	Y	N	N	Y	Y	N	Y	N	Y	N	Y	N	Y
1568	N	Y	N	N	Y	Y	N	Y	N	Y	N	Y	N	Y
1286	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1328	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1557	N	Y	N	N	Y	Y	N	Y	N	Y	N	Y	N	Y
1544	N	Y	N	N	Y	Y	N	Y	N	Y	N	Y	N	Y
1823	N	Y	N	N	N	Y	N	Y	N	Y	N	N	N	Y
1792	N	Y	N	N	N	Y	N	Y	N	Y	N	N	N	Y
1868	N	Y	N	N	N	Y	N	Y	N	Y	N	N	N	Y
1874	N	Y	N	N	N	Y	N	Y	N	Y	N	N	N	Y
1609	N	Y	N	N	Y	Y	N	Y	N	Y	N	Y	N	Y
527	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1477	N	Y	N	N	Y	Y	Y	Y	N	Y	N	Y	N	Y
853	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
1199	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	Y	Y	Y
2222	N	Y	N	N	N	Y	N	Y	N	Y	N	N	N	Y
1045	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1313	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	Y	Y	Y
665	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1145	Y	Y	N	N	Y	Y	Y	Y	N	Y	N	Y	Y	Y
972	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y
972	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y
962	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y
674	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
356	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Types WC & WB TAN Twr, Segments 3 thru 6

Tran Limit* 3960

Vert Limit 9000

TABLE-5 Tangent Design 18 PSF

*Transverse load limit at phase positions adjusted due to additional wind on structure.

	Wind + 2.5 Angle Transverse Load Check													
	ACSR Curlew		AC5R 2B-Curlew		ACCR Dove		ACCR Drake		ACCR 2B-Dove		ACCR 2B-Drake		ACCR Curlew	
Ruling Span Ft.	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical	Transverse	Vertical
1165	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1428	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y
4119	N	Y	N	N	N	Y	N	Y	N	Y	N	Y	N	Y
1656	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1384	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1263	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1434	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1630	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1596	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1568	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1286	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1328	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1557	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1544	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1823	N	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1792	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y
1868	N	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	N	Y
1874	N	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	N	Y
1609	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y
527	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1477	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y
853	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1199	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y
2222	N	Y	N	Y	Y	Y	N	Y	N	Y	N	Y	N	Y
1045	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
1313	Y	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y
665	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
1145	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
972	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
972	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
962	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
674	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
356	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Appendix 6.
Air Quality

Appendix 6

Air Quality

Modifications to Existing Substations (Upgrades)

Substation Cut/Fill Grading and Surface Improvements

Substation	Task	Materials	Approximate Surface Area (sqft)	Approximate volume (cuyd)		
Devers Substation	Substation equipment foundations, cut	Concrete	1,109	108	Acres	0.1
	Substation equipment foundations, import	Concrete	931	199	PM10/day	0.5
	Site Fill	Soil	177	-	PM2.5/day	0.1
	Site Cut	Soil	-	92		
El Casco Substation	Substation equipment foundations, cut	Concrete	770	43	Acres	0.0
	Substation equipment, import	Concrete	910	51	PM10/day	0.4
	Site Cut	Soil	140	8	PM2.5/day	0.1
Vista Substation	Substation equipment foundations, cut	Concrete	1,109	108	Acres	0.0
	Substation equipment foundations, import	Concrete	931	199	PM10/day	0.5
	Site Fill	Soil	125	-	PM2.5/day	0.1
San Bernardino Substation	Substation equipment foundations, cut	Concrete	2,797	322	Acres	0.1
	Substation equipment foundations, import	Concrete	1,558	255	PM10/day	1.3
	Site Fill	Soil	1,239	57	PM2.5/day	0.3
Timoteo Substation	Substation equipment foundations, cut	Concrete	68	4	Acres	0.0
	Substation equipment foundations, import	Concrete	60	3	PM10/day	0.0
	Site Fill	Soil	8	1	PM2.5/day	0.0
Tennessee Substation	Substation equipment foundations, cut	Concrete	25	2	Acres	0.0
	Substation equipment foundations, import	Concrete	30	2	PM10/day	0.0
	Site Cut	Soil	5	-	PM2.5/day	0.0

Modifications to Existing Substations (Upgrades)

Construction Equipment and Workforce Estimates

Substation	Primary Equipment	Estimated Horse-Power	Probable Fuel Type	Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration (hrs./day)	EMFAC2011 Diesel Emission Factors (gms/mi) or OFFROAD Diesel Emissions Factors (lb/hr)							Average Speed (mph)	Miles per day or Hours per day	Estimated Emissions					
								CO	ROG	NO_X	PM_{10}	$PM_{2.5}$	CO_2	CH_4			CO	ROG	NO_X	PM_{10}	$PM_{2.5}$	CO_2e
Devers Substation	***Civil***				**8**	**80**		3.281	0.092	0.333	0.004	0.004	308.221	0.052	40	50	2.9	0.1	0.3	0.0	0.0	10.9
	Auger Truck	210	Diesel	1	2	24	6	0.343	0.074	0.614	0.018	0.016	188.000	0.007		6	2.1	0.4	3.7	0.1	0.1	13.5
	¾-Ton Crew Cab 4x4	275	Gas	2		80	2	2.857	0.103	0.314	0.004	0.004	648.327	0.109	20	2	0.5	0.0	0.1	0.0	0.0	4.6
	Boom/Crane Truck	180	Diesel	1	2	24	6	0.481	0.098	0.731	0.041	0.038	80.300	0.009		6	2.9	0.6	4.4	0.2	0.2	5.8
	Dump Trucks	350	Diesel	2		40	4	0.450	0.156	1.353	0.056	0.052	130.000	0.014		4	3.6	1.3	10.8	0.4	0.4	20.6
	Backhoe	125	Diesel	1	1	40	6	0.464	0.121	0.749	0.063	0.058	64.900	0.011		6	2.8	0.7	4.5	0.4	0.3	7.8
	Lowboy Truck/Trailer	450	Diesel	1		40	2	1.346	0.344	2.989	0.122	0.112	305.000	0.031		2	2.7	0.7	6.0	0.2	0.2	12.2
	Forklift	75	Diesel	1		80	2	0.157	0.038	0.138	0.011	0.010	14.700	0.003		2	0.3	0.1	0.3	0.0	0.0	1.2
	Ditch Digger	75	Diesel	1		40	6	0.276	0.073	0.235	0.019	0.017	25.000	0.007		6	1.7	0.4	1.4	0.1	0.1	3.0
																	19.4	**4.3**	**31.4**	**1.6**	**1.4**	**79.7**
	Electrical				10	120		3.281	0.092	0.333	0.004	0.004	308.221	0.052	40	50	3.6	0.1	0.4	0.0	0.0	20.4
	Manlifts/Bucket Truck	250	Diesel	2		100	6	0.310	0.071	0.706	0.032	0.029	97.934	0.006		6	3.7	0.9	6.5	0.4	0.4	58.8
	Boom/Crane Truck	180	Diesel	1	2	80	6	0.481	0.098	0.731	0.041	0.038	80.300	0.009		6	2.9	0.6	4.4	0.2	0.2	19.3
	¾-Ton Crew Cab 4x4	275	Gas	2		120	2	2.657	0.103	0.314	0.004	0.004	648.327	0.109	20	2	0.5	0.0	0.1	0.0	0.0	6.9
	150-ton Crane	250	Diesel	1	2	40	6	0.282	0.098	0.909	0.032	0.029	112.000	0.009		6	1.7	0.6	5.5	0.2	0.2	13.4
	Lowboy Truck/Trailer	450	Diesel	1		40	2	1.346	0.344	2.989	0.122	0.112	305.000	0.031		2	2.7	0.7	6.0	0.2	0.2	12.2
	Ditch Digger	75	Diesel	1		10	6	0.276	0.073	0.735	0.019	0.017	25.000	0.007		6	1.7	0.4	1.4	0.1	0.1	0.8
	Forklift	75	Diesel	1		100	2	0.157	0.038	0.136	0.011	0.010	14.700	0.003		2	0.3	0.1	0.3	0.0	0.0	1.5
	Utility Truck	180	Gas	1		120	2	2.857	0.103	0.314	0.004	0.004	648.327	0.109	20	2	0.3	0.0	0.0	0.0	0.0	3.4
																	17.3	**3.4**	**26.4**	**1.2**	**1.1**	**136.6**
	Maintenance				**4**	200		3.281	0.092	0.333	0.004	0.004	308.221	0.052	40	50	1.4	0.0	0.1	0.0	0.0	13.6
	Checker/Truck	180	Gas/Diesel	1		200	2	2.857	0.103	0.314	0.004	0.004	648.327	0.109	20	2	0.3	0.0	0.0	0.0	0.0	5.7
	Manlifts	75	Gas/Diesel	1		20	4	0.281	0.093	0.231	0.022	0.020	23.200	0.006		4	1.1	0.4	0.9	0.1	0.1	0.9
	¾-Ton Crew Cab 4x4	275	Gas	1		20	2	2.857	0.103	0.314	0.004	0.004	648.327	0.109	20	2	0.3	0.0	0.0	0.0	0.0	0.6
	Gas/Processing Trailer	0	Electric	0		10	4															
																	3.1	**0.4**	**1.1**	**0.1**	**0.1**	**20.8**
	Test				**2**	140		3.281	0.092	0.333	0.004	0.004	308.221	0.052	40	50	0.7	0.0	0.1	0.0	0.0	4.6
	Utility Truck	180	Gas	1		140	2	2.857	0.103	0.314	0.004	0.004	648.327	0.109	20	2	0.3	0.0	0.0	0.0	0.0	4.0
																	1.0	0.0	0.1	0.0	0.0	8.6
																Fugitive Dust				0.5	0.1	
																Peak Phase Emission	19.4	4.3	31.4	2.1	1.5	

El Casco Substation		***Civil***			9	40		3.281	0.092	0.333	0.004	0.004	308.221	0.052	40	50	2.2	0.1	0.2	0.0	0.0	4.1
	Auger Truck	210	Diesel	0		0	0	0.345	0.074	0.614	0.018	0.016	188.000	0.007		0	0.0	0.0	0.0	0.0	0.0	0.0
	¾-Ton Crew Cab 4×4	275	Gas	2		40	2	2.857	0.103	0.314	0.004	0.004	648.327	0.109	20	2	0.5	0.0	0.1	0.0	0.0	2.3
	Boom/Crane Truck	180	Diesel	0		0	0	0.481	0.098	0.731	0.041	0.038	80.300	0.009		0	0.0	0.0	0.0	0.0	0.0	0.0
	Dump Trucks	350	Diesel	2		25	4	0.450	0.156	1.353	0.056	0.052	130.000	0.014		4	3.6	1.3	10.6	0.4	0.4	13.0
	Backhoe	125	Diesel	1	1	25	6	0.464	0.121	0.749	0.063	0.058	64.900	0.011		6	2.8	0.7	4.5	0.4	0.3	4.9
	Lowboy Truck/Trailer	450	Diesel	1		25	2	1.346	0.344	2.989	0.122	0.112	305.000	0.031		2	2.7	0.7	6.0	0.2	0.2	7.6
	Forklift	75	Diesel	1		30	2	0.157	0.038	0.138	0.011	0.010	14.700	0.003		2	0.3	0.1	0.3	0.0	0.0	0.4
	Ditch Digger	75	Diesel	1		10	6	0.276	0.073	0.235	0.019	0.017	25.000	0.007		6	1.7	0.4	1.4	0.1	0.1	0.8
																	13.7	**3.3**	**23.3**	**1.2**	**1.1**	**33.0**
		Electrical			9	60		3.281	0.092	0.333	0.004	0.004	308.221	0.052	40	50	2.9	0.1	0.3	0.0	0.0	8.2
	Manlifts/Bucket Truck	250	Diesel	2		40	6	0.282	0.098	0.909	0.032	0.029	112.000	0.009		6	3.4	1.2	10.9	0.4	0.3	26.6
	Boom/Crane Truck	180	Diesel	1	2	30	6	0.481	0.098	0.731	0.041	0.038	80.300	0.009		6	2.9	0.6	4.4	0.2	0.2	7.2
	¾-Ton Crew Cab 4×4	275	Gas	2		60	2	2.857	0.103	0.314	0.004	0.004	648.327	0.109	20	2	0.5	0.0	0.1	0.0	0.0	3.4
	150-ton Crane	250	Diesel	1	2	20	6	0.282	0.098	0.909	0.032	0.029	112.000	0.009		6	1.7	0.6	5.5	0.2	0.2	6.7
	Lowboy Truck/Trailer	450	Diesel	1		20	2	1.346	0.344	2.989	0.122	0.112	305.000	0.031		2	2.7	0.7	6.0	0.2	0.2	6.1
	Ditch Digger	75	Diesel	1		10	6	0.276	0.073	0.235	0.019	0.017	25.000	0.007		6	1.7	0.4	1.4	0.1	0.1	0.8
	Forklift	75	Diesel	1		50	2	0.157	0.038	0.138	0.011	0.010	14.700	0.003		2	0.3	0.1	0.3	0.0	0.0	0.7
	Utility Truck	180	Gas	1		60	2	2.852	0.103	0.314	0.004	0.004	648.327	0.109	20	2	0.3	0.0	0.0	0.0	0.0	1.7
																	16.3	**3.7**	**26.6**	**1.2**	**1.1**	**61.7**
		Maintenance			3	100		3.281	0.092	0.333	0.004	0.004	308.221	0.052	40	50	1.1	0.0	0.1	0.0	0.0	5.1
	Checker/Truck	180	Gas/Diesel	1		100	2	2.857	0.103	0.314	0.004	0.004	648.327	0.106		2	0.5	0.0	0.0	0.0	0.0	64.8
	Manlifts	75	Gas/Diesel	1		10	4	0.195	0.053	0.240	0.016	0.017	26.207	0.005		4	0.8	0.2	1.0	0.1	0.1	0.5
	¾-Ton Crew Cab 4×4	275	Gas	1		10	2	2.857	0.103	0.314	0.004	0.004	648.327	0.109	20	2	0.3	0.0	0.0	0.0	0.0	0.3
	Gas/Processing Trailer	0	Electric	0		5	4															
																	2.4	**0.3**	**1.1**	**0.1**	**0.1**	**70.7**
		Test			2	70		3.281	0.092	0.333	0.004	0.004	308.221	0.052	40	50	0.7	0.0	0.1	0.0	0.0	2.4
	Utility Truck	180	Gas	1		70	2	2.857	0.103	0.314	0.004	0.004	648.327	0.106	20	2	0.3	0.0	0.0	0.0	0.0	2.0
																	1.0	0.0	0.1	0.0	0.0	4.4
																Fugitive Dust				0.4	0.1	
																Peak Phase Emission	16.3	3.7	28.8	1.6	1.2	

Vista Substation		**Civil**			8	45		3.281	0.092	0.333	0.004	0.004	308.221	0.052	40	50	2.9	0.1	0.1	0.0	0.0	6.1
	Auger Truck	210	Diesel	0	2	20	6	0.348	0.074	0.614	0.018	0.014	188.000	0.007		6	0.0	0.0	0.0	0.0	0.0	0.0
	¾-Ton Crew Cab 4×4	275	Gas	2		45	2	2.857	0.103	0.314	0.004	0.004	648.327	0.109	20	2	0.5	0.0	0.1	0.0	0.0	2.6
	Boom/Crane Truck	180	Diesel	0	2	20	4	0.481	0.098	0.731	0.041	0.038	80.300	0.009		4	0.0	0.0	0.0	0.0	0.0	0.0
	Dump Trucks	350	Diesel	2		25	4	0.450	0.156	1.353	0.056	0.052	130.000	0.014		4	3.6	1.3	10.6	0.4	0.4	13.0
	Backhoe	125	Diesel	1	1	25	6	0.464	0.121	0.749	0.063	0.058	64.900	0.011		6	2.8	0.7	4.5	0.4	0.3	4.9
	Lowboy Truck/Trailer	450	Diesel	1		25	2	1.346	0.344	2.989	0.122	0.112	305.000	0.031		2	2.7	0.7	6.0	0.2	0.2	7.8
	Forklift	75	Diesel	1		30	2	0.157	0.038	0.138	0.011	0.010	14.700	0.003		2	0.3	0.1	0.3	0.0	0.0	0.4
	Ditch Digger	75	Diesel	1		15	6	0.276	0.073	0.235	0.019	0.017	25.000	0.007		6	1.2	0.4	1.4	0.1	0.1	1.1
																	14.4	**3.3**	**23.3**	**1.3**	**1.1**	**35.7**
		Electrical			10	75		3.281	0.092	0.333	0.004	0.004	308.221	0.052	40	50	3.8	0.1	0.4	0.0	0.0	12.7
	Manlifts/Bucket Truck	250	Diesel	2		65	6	0.282	0.098	0.909	0.032	0.029	112.000	0.009		6	3.4	1.2	10.9	0.4	0.3	43.7
	Boom/Crane Truck	180	Diesel	1	2	60	6	0.481	0.098	0.731	0.041	0.038	80.300	0.009		6	2.6	0.6	4.4	0.2	0.2	14.5
	¾-Ton Crew Cab 4×4	275	Gas	2		75	2	2.857	0.103	0.314	0.004	0.004	648.327	0.109	20	2	0.5	0.0	0.1	0.0	0.0	4.3
	150-ton Crane	250	Diesel	1	2	50	6	0.282	0.098	0.909	0.032	0.029	112.000	0.009		6	1.7	0.6	5.5	0.2	0.2	16.8
	Lowboy Truck/Trailer	450	Diesel	1		50	2	1.346	0.344	2.989	0.122	0.112	305.000	0.031		2	2.7	0.7	6.0	0.2	0.2	15.3
	Ditch Digger	75	Diesel	1		15	4	0.276	0.073	0.235	0.019	0.017	25.000	0.007		6	1.7	0.4	1.4	0.1	0.1	1.3
	Forklift	75	Diesel	1		65	2	0.157	0.038	0.138	0.011	0.010	14.700	0.003		2	0.3	0.1	0.5	0.0	0.0	1.0
	Utility Truck	180	Gas	1		75	2	2.857	0.103	0.314	0.004	0.004	648.327	0.106	20	2	0.3	0.0	0.0	0.0	0.0	2.1
																	17.0	**3.7**	**26.6**	**1.2**	**1.1**	**111.4**
		Maintenance			3	120		3.281	0.092	0.333	0.004	0.004	308.221	0.052	40	50	1.1	0.0	0.1	0.0	0.0	6.1
	Checker/Truck	180	Gas/Diesel	1		120	2	2.857	0.103	0.314	0.004	0.004	648.327	0.106		2	0.3	0.0	0.0	0.0	0.0	77.8
	Manlifts	75	Gas/Diesel	1		20	4	0.281	0.091	0.231	0.022	0.020	23.200	0.008		4	1.1	0.4	0.5	0.1	0.1	0.6
	¾-Ton Crew Cab 4×4	275	Gas	1		20	2	2.857	0.103	0.314	0.004	0.004	648.327	0.109	20	2	0.3	0.0	0.0	0.0	0.0	0.6
	Gas/Processing Trailer	0	Electric	0		10	4															
																	2.2	**0.4**	**1.1**	**0.1**	**0.1**	**85.4**
		Test			2	120		3.281	0.092	0.333	0.004	0.004	308.221	0.052	40	50	0.7	0.0	0.1	0.0	0.0	4.1
	Utility Truck	180	Gas	1		120	2	2.857	0.103	0.314	0.004	0.004	648.327	0.106	20	2	0.3	0.0	0.0	0.0	0.0	3.4
																	1.0	0.0	0.1	0.0	0.0	7.1
																Fugitive Dust				0.5	0.1	
																Peak Phase Emission	17.0	3.7	28.6	1.7	1.2	

San Bernardino Substation		**Civil**			8	80		3.281	0.092	0.333	0.004	0.004	308.221	0.052	40	50	2.9	0.1	0.3	0.0	0.0	10.9
	Auger Truck	210	Diesel	1	2	24	8	0.343	0.074	0.614	0.018	0.016	188.000	0.007		6	2.1	0.4	3.7	0.1	0.1	13.5
	¾-Ton Crew Cab 4x4	275	Gas	2		80	2	2.857	0.103	0.314	0.004	0.004	648.327	0.109	20	2	0.5	0.0	0.1	0.0	0.0	4.6
	Boom/Crane Truck	180	Diesel	1	2	24	6	0.481	0.098	0.731	0.041	0.038	80.300	0.009		6	2.9	0.6	4.4	0.2	0.2	5.8
	Dump Trucks	350	Diesel	2		40	4	0.450	0.156	1.353	0.056	0.052	130.000	0.014		4	3.6	1.3	10.8	0.4	0.4	20.8
	Backhoe	125	Diesel	1	1	40	6	0.464	0.121	0.749	0.063	0.058	64.900	0.011		6	2.8	0.7	4.5	0.4	0.3	7.8
	Lowboy Truck/Trailer	450	Diesel	1		40	2	1.346	0.344	2.989	0.122	0.112	305.000	0.031		2	2.7	0.7	6.0	0.2	0.2	12.2
	Forklift	75	Diesel	1		80	2	0.157	0.038	0.138	0.011	0.010	14.700	0.003		2	0.3	0.1	0.3	0.0	0.0	1.2
	Ditch Digger	75	Diesel	1		40	6	0.276	0.073	0.235	0.019	0.017	25.000	0.007		6	1.7	0.4	1.4	0.1	0.1	3.0
																	19.4	**4.3**	**31.4**	**1.6**	**1.4**	**79.7**
		Electrical			10	120		3.281	0.092	0.333	0.004	0.004	308.221	0.052	40	50	3.6	0.1	0.4	0.0	0.0	20.4
	Manlifts/Bucket Truck	250	Diesel	2		100	6	0.282	0.098	0.909	0.032	0.029	112.000	0.009		6	3.4	1.2	10.9	0.4	0.3	67.2
	Boom/Crane Truck	180	Diesel	1	2	80	6	0.481	0.098	0.731	0.041	0.038	80.300	0.009		6	2.9	0.6	4.4	0.2	0.2	19.3
	¾-Ton Crew Cab 4x4	275	Gas	2		120	2	2.857	0.103	0.314	0.004	0.004	648.327	0.109	20	2	0.5	0.0	0.1	0.0	0.0	6.9
	150-ton Crane	250	Diesel	1	2	40	6	0.282	0.098	0.909	0.032	0.029	112.000	0.009		6	1.7	0.6	5.5	0.2	0.2	13.4
	Lowboy Truck/Trailer	450	Diesel	1		40	2	1.346	0.344	2.989	0.122	0.112	305.000	0.031		2	2.7	0.7	6.0	0.2	0.2	12.2
	Ditch Digger	75	Diesel	1		10	6	0.276	0.073	0.235	0.019	0.017	25.000	0.007		6	1.7	0.4	1.4	0.1	0.1	0.8
	Forklift	75	Diesel	1		100	2	0.157	0.038	0.138	0.011	0.010	14.700	0.003		2	0.3	0.1	0.3	0.0	0.0	1.5
	Utility Truck	180	Gas	1		120	2	2.857	0.103	0.314	0.004	0.004	648.327	0.109	20	2	0.3	0.0	0.0	0.0	0.0	3.4
																	17.0	**3.7**	**28.9**	**1.2**	**1.1**	**145.0**
		Maintenance			4	200		3.281	0.092	0.333	0.004	0.004	308.221	0.052	40	50	1.4	0.0	0.1	0.0	0.0	13.6
	Checker/Truck	180	Gas/Diesel	1		200	2	2.857	0.103	0.314	0.004	0.004	648.327	0.109		2	0.3	0.0	0.0	0.0	0.0	129.7
	Manlifts	75	Gas/Diesel	1		20	4	0.281	0.093	0.231	0.022	0.020	23.200	0.008		4	1.1	0.4	0.9	0.1	0.1	0.9
	¾-Ton Crew Cab 4x4	275	Gas	1		20	2	2.857	0.103	0.314	0.004	0.004	648.327	0.109	20	2	0.3	0.0	0.0	0.0	0.0	0.6
	Gas/Processing Trailer	0	Electric	0		10	4															
																	3.1	**0.4**	**1.1**	**0.1**	**0.1**	**144.8**
		Test			2	140		3.281	0.092	0.333	0.004	0.004	308.221	0.052	40	50	0.7	0.0	0.1	0.0	0.0	4.8
	Utility Truck	180	Gas	1		140	2	2.857	0.103	0.314	0.004	0.004	648.327	0.109	20	2	0.3	0.0	0.0	0.0	0.0	4.0
																	1.0	**0.0**	**0.1**	**0.0**	**0.0**	**8.8**
															Fugitive Dust					**1.3**	**0.3**	
															Peak Phase Emission		19.4	4.3	31.4	2.8	1.7	

Etiwanda Substation		**Electrical**			2	25		3.281	0.092	0.333	0.004	0.004	308.221	0.052	40	50	0.7	0.0	0.1	0.0	0.0	0.8
	3/4-Ton Crew Cab 4x4	275	Gas	1		25	2	2.857	0.103	0.314	0.004	0.004	648.327	0.109	20	2	0.3	0.0	0.0	0.0	0.0	0.7
																	1.0	**0.0**	**0.1**	**0.0**	**0.0**	**1.6**
		Test			2	20		3.281	0.092	0.333	0.004	0.004	308.221	0.052	40	50	0.7	0.0	0.1	0.0	0.0	0.7
	Utility Truck	180	Gas	1		20	2	2.857	0.103	0.314	0.004	0.004	648.327	0.109	20	2	0.3	0.0	0.0	0.0	0.0	0.6
																	1.0	**0.0**	**0.1**	**0.0**	**0.0**	**1.3**
															Fugitive Dust					**0.0**	**0.0**	
															Peak Phase Emission		1.0	0.0	0.1	0.0	0.0	

	Civil				**3**			**8**	3.281	0.092	0.333	0.004	0.004	308.221	0.052	40	50	1.1	0.0	0.1	0.0	0.0	0.4
	Office Trailer	0	Electric	0		0		0															
	Auger Truck	210	Diesel	0		0		0	0.343	0.074	0.614	0.010	0.016	188.000	0.007		0	0.0	0.0	0.0	0.0	0.0	0.0
	3/4-Ton Crew Cab 4×4	275	Gas	1		8		2	2.857	0.103	0.314	0.004	0.004	648.327	0.109	20	2	0.3	0.0	0.0	0.0	0.0	0.2
	Boom/ Crane Truck	180	Diesel	0		0		0	0.481	0.098	0.731	0.041	0.038	80.300	0.009		0	0.0	0.0	0.0	0.0	0.0	0.0
	Dump Trucks	350	Diesel	1	1	4		4	0.450	0.156	1.353	0.056	0.052	130.000	0.014		4	0.1	0.0	0.2	0.0	0.0	1.0
	Backhoe	125	Diesel	1		4		6	0.464	0.121	0.749	0.063	0.058	64.900	0.011		6	0.1	0.0	0.2	0.0	0.0	0.8
	Lowboy Truck/Trailer	450	Diesel	0		0		0	1.346	0.344	2.909	0.122	0.112	305.000	0.031		0	0.0	0.0	0.0	0.0	0.0	0.0
	Forklift	75	Diesel	0		0		0	0.157	0.038	0.138	0.011	0.010	14.700	0.003		0	0.0	0.0	0.0	0.0	0.0	0.0
	Ditch Digger	75	Diesel	0		0		0	0.276	0.073	0.235	0.019	0.017	25.000	0.007		0	0.0	0.0	0.0	0.0	0.0	0.0
																		1.5	**0.1**	**0.6**	**0.0**	**0.0**	**2.5**
	Electrical				**5**		**25**		3.281	0.092	0.333	0.004	0.004	308.221	0.052	40	50	1.8	0.1	0.2	0.0	0.0	2.1
	Office Trailer	0	Electric	0		0		0															
	Manlifts/Bucket Truck	250	Diesel	1		20		6	0.282	0.098	0.909	0.032	0.029	112.000	0.009		6	0.1	0.0	0.2	0.0	0.0	6.7
	Boom/ Crane Truck	180	Diesel	1		6		4	0.401	0.090	0.731	0.041	0.030	00.300	0.009		4	0.1	0.0	0.1	0.0	0.0	1.0
Timoteo Substation	3/4-Ton Crew Cab 4×4	275	Gas	1		25		2	2.857	0.103	0.314	0.004	0.004	648.327	0.109	20	2	0.3	0.0	0.0	0.0	0.0	0.7
	150-ton Crane	250	Diesel	0		0		0	0.282	0.098	0.909	0.032	0.029	112.000	0.009		0	0.0	0.0	0.0	0.0	0.0	0.0
	Lowboy Truck/Trailer	450	Diesel	0		0		0	1.340	0.344	2.909	0.122	0.112	305.000	0.031		0	0.0	0.0	0.0	0.0	0.0	0.0
	Ditch Digger	75	Diesel	0		0		0	0.276	0.073	0.235	0.019	0.017	25.000	0.007		0	0.0	0.0	0.0	0.0	0.0	0.0
	Forklift	75	Diesel	1		10		4	0.157	0.038	0.138	0.011	0.010	14.700	0.003		4	0.0	0.0	0.0	0.0	0.0	0.3
	Utility Truck	180	Gas	0		0		0	2.057	0.103	0.314	0.004	0.004	640.327	0.109	20	0	0.0	0.0	0.0	0.0	0.0	0.0
																		2.2	**0.1**	**0.6**	**0.0**	**0.0**	**10.8**
	Maintenance				**3**		**25**		3.281	0.092	0.333	0.004	0.004	300.221	0.052	40	50	1.1	0.0	0.1	0.0	0.0	1.3
	Checker/ Truck	100	Gas/Diesel	1		25		2	2.857	0.103	0.314	0.004	0.004	648.327	0.109		2	0.3	0.0	0.0	0.0	0.0	16.2
	Manlifts	75	Gas/Diesel	0		0		0	0.281	0.093	0.231	0.022	0.020	23.200	0.008		0	0.0	0.0	0.0	0.0	0.0	0.0
	3/4-Ton Crew Cab 4×4	275	Gas	1		4		2	2.857	0.103	0.314	0.004	0.004	640.327	0.109	20	2	0.3	0.0	0.0	0.0	0.0	0.1
	Gas/Processing Trailer	0	Electric	1		2		6										0.0	0.0	0.0	0.0	0.0	0.0
																		1.6	**0.0**	**0.2**	**0.0**	**0.0**	**17.6**
	Test				**2**		**15**		3.281	0.092	0.333	0.004	0.004	308.221	0.052	40	50	0.7	0.0	0.1	0.0	0.0	0.5
	Utility Truck	180	Gas	1		15		2	2.857	0.103	0.314	0.004	0.004	648.327	0.109	20	2	0.3	0.0	0.0	0.0	0.0	0.4
																		1.0	**0.0**	**0.1**	**0.0**	**0.0**	**0.9**
																	Fugitive Dust				0.0	0.0	
																	Peak Phase Emission	2.2	0.1	0.6	0.1	0.0	

	Civil				**3**		**4**		3.281	0.092	0.333	0.004	0.004	308.221	0.052	40	50	1.1	0.0	0.1	0.0	0.0	0.2
	3/4-Ton Crew Cab 4×4	275	Gas	1		4		2	2.857	0.103	0.314	0.004	0.004	648.327	0.109	20	2	0.3	0.0	0.0	0.0	0.0	0.1
	Dump Trucks	350	Diesel	1	1	2		4	0.450	0.156	1.353	0.056	0.052	130.000	0.014		4	0.1	0.0	0.2	0.0	0.0	0.5
	Backhoe	125	Diesel	1		2		6	0.464	0.121	0.749	0.083	0.058	64.900	0.011		6	0.1	0.0	0.2	0.0	0.0	0.4
																		1.5	**0.1**	**0.6**	**0.0**	**0.0**	**1.2**
	Electrical				**5**		**14**		3.281	0.092	0.333	0.004	0.004	308.221	0.052	40	50	1.8	0.1	0.2	0.0	0.0	1.2
	Manlifts/Bucket Truck	250	Diesel	1		10		6	0.202	0.090	0.909	0.032	0.029	112.000	0.009		6	0.1	0.0	0.2	0.0	0.0	3.4
	Boom/ Crane Truck	180	Diesel	1		3		4	0.481	0.098	0.731	0.041	0.038	80.300	0.009		4	0.1	0.0	0.1	0.0	0.0	0.5
	3/4-Ton Crew Cab 4×4	275	Gas	1		14		2	2.857	0.103	0.314	0.004	0.004	846.327	0.109	20	2	0.3	0.0	0.0	0.0	0.0	0.4
Tennessee Substation	Forklift	75	Diesel	1		8		4	0.157	0.038	0.130	0.011	0.010	14.700	0.003		4	0.0	0.0	0.0	0.0	0.0	0.2
																		2.2	**0.1**	**0.8**	**0.0**	**0.0**	**5.7**
	Maintenance				**4**		**14**		3.281	0.092	0.333	0.004	0.004	300.221	0.052	40	50	1.4	0.0	0.1	0.0	0.0	1.0
	Checker/ Truck	180	Gas/Diesel	1		14		2	2.857	0.103	0.314	0.004	0.004	646.327	0.109		2	0.3	0.0	0.0	0.0	0.0	9.1
	3/4-Ton Crew Cab 4×4	275	Gas	1		2		2	2.857	0.103	0.314	0.004	0.004	648.327	0.109	20	2	0.3	0.0	0.0	0.0	0.0	0.1
	Gas/Processing Trailer	0	Electric	1		1		6									6	0.0	0.0	0.0	0.0	0.0	0.0
																		2.0	**0.1**	**0.2**	**0.0**	**0.0**	**10.1**
	Test				**2**		**8**		3.281	0.092	0.333	0.004	0.004	300.221	0.052	40	50	0.7	0.0	0.1	0.0	0.0	0.3
	Utility Truck	180	Gas	1		8		2	2.857	0.103	0.314	0.004	0.004	648.327	0.109	20	2	0.3	0.0	0.0	0.0	0.0	0.2
																		1.0	**0.0**	**0.1**	**0.0**	**0.0**	**0.5**
																	Fugitive Dust				0.0	0.0	
																	Peak Phase Emission	2.2	0.1	0.8	0.0	0.0	
																					total CO2e =		1086.2

Note: The fugitive dust emissions were calculated using the maximum disturbed area for each substation. To calculate the maximum emissions, the fugitive dust emissions were added to the peak phase emissions

Transmission and Subtransmission (Removal and Installation)

Transmission and Subtransmission Land Disturbance

Transmission Land Disturbance (Excluding Segment 5)

Project Feature	Site Quantity	Disturbed Acreage Calculation (L x W)	Acres Disturbed During Construction	Acres to be Restored (Temporary)	Acres Permanently Disturbed	Segment 1	Segment 2	Segment 3	Segment 4	Segment 6
Guard Structures	667	150' x 50'	114.8	114.8	0	10.4	14.9	29.8	35.7	23.9
Remove Existing Lattice Steel Tower (1)	426	220' x 220'	473.3	473.3	0	43.1	61.5	123.1	147.2	98.4
Remove Existing Tubular Steel Pole (1)	5	220' x 150'	3.8	3.8	0	0.3	0.5	1.0	1.2	0.8
Remove Existing Wood H-Frame (1)	186	175' x 125'	93.4	93.4	0	8.5	12.1	24.3	29.0	19.4
Construct New Lattice Steel Tower (2)	452	220' x 220'	502.2	389.2	113	45.7	65.3	130.6	156.2	104.5
Construct New Tubular Steel Pole (2)	4	220' x 150'	3	2.8	0.2	0.3	0.4	0.8	0.9	0.6
Construct New Wood H-Frame Pole (2)	1	175' x 125'	0.5	0.4	0.1	0.0	0.1	0.1	0.2	0.1
Conductor Stringing Setup Area (3)	93	600' x 150'	192.1	192.1	0	17.5	25.0	49.9	59.7	40.0
Conductor Splicing Setup Areas (3)	10	200' x 150'	6.9	6.9	0	0.6	0.9	1.8	2.1	1.4
Existing Access Roads to be improved (4)	130	linear miles x 18'	283.6	0	283.6	25.8	36.9	73.7	88.2	59.0
New Access Roads (4)	21	linear miles x 18'	45.8	0	45.8	4.2	6.0	11.9	14.2	9.5
Crane Pads, Walls, Cut Slopes	-	-	2611.3	2538.8	73	237.6	339.5	678.9	812.1	543.2
Total Estimated Disturbance Acreage			**4320.6**	**3805.3**	**515.3**	394.1	563.0	1126.0	1346.8	900.8
					Max Days	41.0	61.0	122.0	146.0	97.0
					Acres/day	9.612041	9.229361	9.229361	9.224984	9.286449
					PM10/day	95.73593	91.92443	91.92443	91.88084	92.49304
					PM2.5/day	20.10455	19.30413	19.30413	19.29498	19.42354

Transmission Land Disturbance (Segment 5)

Project Feature	Site Quantity	Disturbed Acreage Calculation (L x W)	Acres Disturbed During Construction	Acres to be Restored (Temporary)	Acres Permanently Disturbed
Construct New Lattice Steel Tower (1)	74	220' x 220'	80	62	18
Construct New Tubular Steel Pole (1)	36	220' x 150'	27.3	25.1	2.2
Conductor Stringing Setup Area (2)	30	600' x 150'	62	62	0
Conductor Splicing Setup Areas (2)	4	200' x 150'	2.8	2.8	0
New Access Roads (3)	4.8	linear miles x 18'	10.3	0	10.3
Crane Pads, Walls, Cut Slopes	-	-	308.4	301.7	6.7
Total Estimated Disturbance Acreage			**490.7**	**453.6**	**37.1**
		Max Days	54.0		
		Acres/day	9.087037037		
		PM10/day	90.50688889		
		PM2.5/day	19.00644667		

Subtransmission Land Disturbance

Project Feature	Quantity of Sites	Disturbed Acreage Calculation (L x W)	Total Acres Disturbed During Construction	Acres to be Restored (Temporary)	Acres Permanently Disturbed
Guard Structures	70 ea	75′ x 50′	6	6	0
Remove Existing Lattice Steel Tower (1)	9 ea	220′ x 220′	10	10	0
Remove Existing Wood Pole (1)	28 ea	175′ x 100′	11.2	11.2	0
Construct New Tubular Steel Pole (2)	26 ea	220′ x 150′	19.7	18.1	1.6
Construct New Light Weight Steel/ Wood Pole (2)	154 ea	175′ x 100′	61.9	60.3	1.5
Conductor Stringing Setup Area (3)	28 ea	400′ x 100′	25.7	25.7	0
Install Underground Cable in Conduit	5,280 linear feet	Linear feet x 24″ wide	2.9	2.9	0
Install Underground Vault	9 ea	100′ x 100′	2.1	2.1	0
Total Estimated Disturbance Acreage (4)			140.9	136.4	3.1
		Max Days	54		
		Acres/day	2.609259259		
		PM10/day	25.98822222		
		PM2.5/day	5.457526667		

Transmission Land Disturbance Alternative (Segment 5)

Project Feature	Site Quantity	Disturbed Acreage Calculation (L x W)	Acres Disturbed During Construction	Acres to be Restored (Temporary)	Acres Permanently Disturbed
Construct New Lattice Steel Tower (1)	74	220′ x 220′	82.2	63.7	18.5
Construct New Tubular Steel Pole (1)	36	220′ x 150′	27.3	25.1	2.2
Conductor Stringing Setup Area (2)	30	600′ x 150′	62	62	0
Conductor Splicing Setup Areas (2)	4	200′ x 150′	2.8	2.8	0
New Access Roads (3)	5.3	11.6	11.6	0	11.6
Crane Pads, Walls, Cut Slopes	-	-	308.4	301.7	6.7
Total Estimated Disturbance Acreage			494.3	455.3	39
		Max Days	56		
		Acres/day	8.826785714		
		PM10/day	87.91478571		
		PM2.5/day	18.462105		

Transmission and Subtransmission Construction Equipment and Workforce Estimates

Transmission (Segment 1) Construction Equipment and Workforce Estimates

Work Activity				Activity Production				EMFAC2011 Diesel Emission Factors (gms/mi) or OFFROAD Diesel Emissions Factors (lb/hr)							Average Speed (mph)	Miles per day or Hours per day	Estimated Emissions					
Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs/Day)	Estimated Production Per Day	CO	ROG	NO_X	PM_{10}	$PM_{2.5}$	CO_2	CH_4			CO	ROG	NO_X	PM_{10}	$PM_{2.5}$	CO_2e
																	(lbs/day)	(lbs/day)	(lbs/day)	(lbs/day)	(lbs/day)	(MT/yr)
Survey – (1)				**4**	**3**		**3.5**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	1.4	0.0	0.1	0.0	0.0	0.2
3/4-Ton Pick-up Truck, 4x4	200	Gas	2		3	8	1.3 Miles/Day	2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	20	8	2.0	0.1	0.2	0.0	0.0	0.7
															Total		**3.5**	**0.1**	**0.4**	**0.0**	**0.0**	**0.9**
															Total (tons)		**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	
Marshalling Yard – (2)				**4**				3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	1.4	0.0	0.1	0.0	0.0	0.0
1-Ton Crew Cab, 4x4	300	Diesel	1		2	4		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	4	0.1	0.0	0.2	0.0	0.0	0.1
R/T Crane (M)	300	Diesel	1		2	5		0.3243	0.1077	0.9866	0.0348	0.0320	125.6000	0.0097		5	1.6	0.5	4.9	0.2	0.2	0.6
R/T Forklift	200	Diesel	1		2	5		0.3311	0.0524	0.3883	0.0214	0.0197	56.1000	0.0047		5	1.7	0.3	1.9	0.1	0.1	0.3
Water Truck	300	Diesel	1		2	10		0.4236	0.1474	1.2027	0.0408	0.0375	188.0000	0.0133		10	4.2	1.5	12.0	0.4	0.4	1.9
Jet A Fuel Truck			1		2	4		0.6148	0.2034	1.6679	0.0579	0.0533	260.0000	0.0183		4	2.5	0.8	6.7	0.2	0.2	1.0
Truck, Semi, Tractor	350	Diesel	1		2	6		0.5063	0.1560	1.3478	0.0449	0.0413	241.2000	0.0141		6	3.0	0.9	8.1	0.3	0.2	1.4
															Total		**14.6**	**4.1**	**34.0**	**1.2**	**1.1**	**5.3**
															Total (tons)		**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	
R/W Clearing – (3)				**5**	**11**		**3.5 Miles**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	1.8	0.1	0.2	0.0	0.0	0.9
1-Ton Crew Cab, 4x4	300	Diesel	1		11	10		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	10	0.4	0.1	0.4	0.1	0.1	0.8
Motor Grader	350	Diesel	1		11	7		0.5992	0.1759	1.5242	0.0550	0.0506	229.0000	0.1398		7	4.2	1.2	10.7	0.4	0.4	8.8
Water Truck	350	Diesel	2		11	7	0.4 Miles/Day	0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		7	6.6	2.3	18.2	0.6	0.6	16.1
Backhoe/Front Loader	350	Diesel	1		11	7		0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		7	5.1	1.5	12.8	0.4	0.4	13.3
Track Type Dozer	350	Diesel	1		11	9		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236		9	8.3	2.4	19.8	0.8	0.8	10.7
Lowboy Truck/Trailer	500	Diesel	1		11	5		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236		5	4.6	1.3	11.0	0.5	0.4	5.9
															Total		**31.0**	**8.8**	**72.9**	**2.8**	**2.6**	**56.5**
															Total (tons)		**0.2**	**0.0**	**0.4**	**0.0**	**0.0**	
Roads & Landing Work – (4)				**10**	**11**		**13.9 Miles & 42 Pads**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	3.6	0.1	0.4	0.0	0.0	1.9
1-Ton Crew Cab, 4x4	300	Diesel	4		11	5		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	5	0.7	0.2	0.8	0.1	0.1	1.6
Motor Grader	350	Diesel	2		11	5		0.5992	0.1759	1.5242	0.0550	0.0506	229.0000	0.1398		5	6.0	1.8	15.2	0.6	0.5	12.6
Water Truck	350	Diesel	4		11	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	46.0
Backhoe/Front Loader	350	Diesel	2		11	7	1.3 Miles/Day & 5 Structure Pads/Day	0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		7	10.1	3.1	25.6	0.9	0.8	26.6
Drum Type Compactor	250	Diesel	2		11	5		0.3595	0.1207	1.1333	0.0429	0.0395	122.2913	0.0109		5	3.6	1.2	11.3	0.4	0.4	6.7
Track Type Dozer	350	Diesel	2		11	7		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236		7	13.0	3.7	30.7	1.3	1.2	16.6
Excavator	300	Diesel	2		6	7		0.5102	0.1657	1.3127	0.0023	0.0021	174.0000	0.0115		7	7.1	2.3	18.4	0.0	0.0	7.3
Lowboy Truck/Trailer	500	Diesel	2		6	4		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236		4	7.4	2.1	17.6	0.7	0.7	5.2
															Total		**70.4**	**20.9**	**171.9**	**5.8**	**5.4**	**124.4**
															Total (tons)		**0.2**	**0.1**	**0.5**	**0.0**	**0.0**	
Guard Structure Installation – (5)				**12**	**5**		**60 Structures**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	4.3	0.1	0.4	0.0	0.0	1.0
3/4-Ton Pick-up Truck, 4x4	300	Diesel	4	4	5	8		2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	40	50	1.3	0.0	0.1	0.0	0.0	0.7
1-Ton Crew Cab Flat Bed, 4x4	300	Diesel	2		5	8		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	8	0.6	0.1	0.6	0.1	0.1	0.6
Compressor Trailer	120	Diesel	2		5	7		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		7	4.5	1.1	6.6	0.6	0.5	1.6
Auger Truck	500	Diesel	2		5	5		0.6134	0.2065	1.5945	0.0567	0.0522	272.0000	0.0186		5	6.1	2.1	15.9	0.6	0.5	6.8
Extendable Flat Bed Pole Truck	350	Diesel	2		5	8	12 Structures/Day	0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		8	7.5	2.6	20.8	0.7	0.7	8.4
R/T Crane (M)	500	Diesel	2		5	8		0.4948	0.1468	1.2979	0.0470	0.0432	180.0000	0.0132		8	7.9	2.3	20.8	0.8	0.7	7.2
Water Truck	350	Diesel	1		5	8		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		8	3.8	1.3	10.4	0.4	0.3	4.2
Extendable Flat Bed Pole Truck	350	Diesel	2		5	8		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		8	7.5	2.6	20.8	0.7	0.7	8.4
															Total		**43.6**	**12.3**	**96.5**	**3.8**	**3.5**	**38.9**
															Total (tons)		**0.1**	**0.0**	**0.2**	**0.0**	**0.0**	
Remove Existing Conductor & OHGW – (6)				**56**	**41**		**70 Circuit Miles**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	20.3	0.8	2.1	0.0	0.0	39.0
1-Ton Crew Cab, 4x4	300	Diesel	16		41	10		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	10	5.6	1.2	6.0	1.0	1.0	47.1
Man-lift / Bucket Truck	350	Diesel	12		41	10		0.3637	0.0870	0.9773	0.0354	0.0326	143.9610	0.0079		10	43.6	10.4	117.3	4.3	3.9	354.1
Sleeving Truck	300	Diesel	4		41	5		0.4236	0.1474	1.2027	0.0408	0.0375	188.0000	0.0133		5	8.5	2.9	24.1	0.8	0.8	77.1
R/T Crane (M)	300	Diesel	4	4	41	5		0.3243	0.1077	0.9866	0.0348	0.0320	125.6000	0.0097		5	6.5	2.2	19.7	0.7	0.6	51.5
Flat Bed Trailer	N/A	N/A	12		38	3	1.7 Miles/Day	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		3	0.0	0.0	0.0	0.0	0.0	0.0
Truck, Semi, Tractor	350	Diesel	4		38	3		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		3	5.7	1.9	15.6	0.5	0.5	47.7
Bull Wheel Puller	500	Diesel	4		29	5		0.6064	0.2032	1.8639	0.0630	0.0580	265.0000	0.0183		5	12.1	4.1	37.3	1.3	1.2	76.9
Water Truck	350	Diesel	4		29	6		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		6	11.3	3.9	31.2	1.1	1.0	72.7
Hydraulic Rewind Puller	300	Diesel	4		29	5		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		5	6.2	2.2	21.8	0.7	0.6	39.4
															Total		**119.7**	**29.5**	**275.1**	**10.4**	**9.6**	**805.5**
															Total (tons)		**1.7**	**0.4**	**4.0**	**0.2**	**0.1**	

220kV H-Frame/S Pole Structure Removals				**32**	**31**		**59 Towers**	3.2811	0.0923	0.3335	0.0038	0.0035	306.2209	0.0518	40	50	11.6	0.3	1.2	0.0	0.0	16.9
1-Ton Crew Cab, 4×4	300	Diesel	8		31	10	6 Structures/Day	0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	10	2.8	0.6	3.0	0.5	0.5	17.8
Compressor Trailer	120	Diesel	8		31	5		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		5	12.9	3.0	18.7	1.7	1.5	29.1
Backhoe/Front Loader	350	Diesel	4		31	10		0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		10	29.0	8.7	73.0	2.5	2.3	213.9
Man lift / Bucket Truck	350	Diesel	4		31	8		0.3637	0.0870	0.9773	0.0354	0.0326	143.9610	0.0079		8	11.6	2.8	31.3	1.1	1.0	71.4
Boom/Crane Truck	350	Diesel	4		31	8		0.3669	0.1175	1.0644	0.0378	0.0348	139.2000	0.0106		8	11.7	3.8	34.1	1.2	1.1	69.0
Flat Bed Pole Truck	400	Diesel	4		31	10		0.5185	0.1769	1.3986	0.0487	0.0448	230.0000	0.0160		10	20.7	7.1	55.9	1.9	1.8	142.6
															Total		**100.4**	**26.3**	**217.2**	**9.0**	**8.3**	**560.7**
															Total (tons)		**1.6**	**0.4**	**3.4**	**0.1**	**0.1**	
Remova Existing Lattice Steel Towers -- (7)				**32**	**16**		**39 Towers**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	11.6	0.3	1.2	0.0	0.0	8.7
1-Ton Crew Cab, 4×4	300	Diesel	8		16	8	2.5 Towers/Day	0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	8	2.3	0.5	2.4	0.4	0.4	7.4
R/T Crane (M)	215	Diesel	8		16	5		0.3745	0.0978	0.8256	0.0361	0.0332	97.2000	0.0088		5	15.0	3.9	33.0	1.4	1.3	31.1
Compressor Trailer	120	Diesel	8		16	10		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		10	25.7	6.1	37.5	3.3	3.1	30.0
Flat Bed Truck/Trailer	350	Diesel	4		16	8		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		8	15.1	5.2	41.6	1.4	1.3	53.5
Water Truck	350	Diesel	4		16	6		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		6	11.3	3.9	31.2	1.1	1.0	40.1
															Total		**80.9**	**19.9**	**146.9**	**7.7**	**7.1**	**170.8**
															Total (tons)		**0.6**	**0.2**	**1.2**	**0.1**	**0.1**	
Remove Existing Foundations -- (8)				**16**	**15**		**39 Towers**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	5.8	0.2	0.6	0.0	0.0	4.3
1-Ton Crew Cab Flat Bed, 4×4	300	Diesel	4		16	10	2.5 Towers/Day	0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	10	1.4	0.3	1.5	0.3	0.2	4.6
Dump Truck	350	Diesel	4		16	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	66.9
Backhoe/Front Loader	350	Diesel	4		16	10		0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		10	29.0	8.7	73.0	2.5	2.3	110.4
Water Truck	350	Diesel	4		16	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	66.9
															Total		**73.9**	**22.2**	**179.2**	**6.4**	**5.8**	**253.1**
															Total (tons)		**0.6**	**0.2**	**1.4**	**0.1**	**0.0**	
Remove Existing Tubular Steel Poles -- (9)				**24**	**2**		**5 TSP**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	8.7	0.2	0.9	0.0	0.0	0.8
3/4-Ton Pick-up Truck, 4×4	300	Diesel	8		2	8	3.8 Steel Poles/Day	2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090		8	182.8	6.6	20.1	0.3	0.3	41.5
R/T Crane (M)	300	Diesel	4		2	5		0.3243	0.1077	0.9866	0.0348	0.0320	125.6000	0.0097		5	6.5	2.2	19.7	0.7	0.6	7.5
Compressor Trailer	120	Diesel	4		2	10		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		10	17.9	3.0	18.7	1.7	1.5	1.9
Water Truck	350	Diesel	4		2	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	16.8	6.5	52.0	1.8	1.6	8.4
															Total		**229.7**	**16.5**	**111.5**	**4.4**	**4.1**	**55.1**
															Total (tons)		**0.2**	**0.0**	**0.1**	**0.0**	**0.0**	
Install LST Foundations -- (10)				**28**	**13**		**42 LST's**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	10.1	0.3	1.0	0.0	0.0	6.2
1-Ton Crew Cab Flat Bed, 4×4	300	Diesel	8		13	5	3.2 LSTs/Day	0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	5	1.4	0.3	1.5	0.3	0.2	3.7
R/T Crane (M)	300	Diesel	4		13	7		0.3243	0.1077	0.9866	0.0348	0.0320	125.6000	0.0097		7	9.1	3.0	27.6	1.0	0.9	22.8
Backhoe/Front Loader	200	Diesel	4		13	10		0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		10	29.0	8.7	73.0	2.5	2.3	89.7
Auger Truck	500	Diesel	4		13	10		0.6134	0.2065	1.5945	0.0567	0.0522	272.0000	0.0186		10	24.5	8.3	63.8	2.3	2.1	70.7
10-cu. yd. Dump Truck	350	Diesel	8		13	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	37.7	13.0	104.1	3.6	3.3	108.7
Kaman K-MAX		Jet A	1		13	7		1.3532	1.1287	7.4027	0.2005	0.1845	1930.3207	0.0000		7	9.5	7.9	51.8	1.4	1.3	67.8
4000 gallon Water Truck	350	Diesel	4		13	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	54.3
10-cu. yd. Concrete Mixer Truck	425	Diesel	12		13	7		0.5422	0.1843	1.4476	0.0507	0.0467	240.5000	0.0166		7	45.5	15.5	121.6	4.3	3.9	131.3
															Total		**165.7**	**63.5**	**486.5**	**17.1**	**15.7**	**575.4**
															Total (tons)		**1.2**	**0.4**	**3.2**	**0.1**	**0.1**	
LST Steel Haul -- (11)				**8**	**16**		**42 LST's**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	2.9	0.1	0.3	0.0	0.0	2.2
1-Ton Crew Cab Flat Bed, 4×4	300	Diesel	4		16	10	2.5 LSTs/Day	0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	10	1.4	0.3	1.5	0.3	0.2	4.6
Truck/Trailer	400	Diesel	4		16	10		0.5185	0.1769	1.3986	0.0487	0.0448	230.0000	0.0160		10	20.7	7.1	55.9	1.9	1.6	73.6
Bell 212		Jet A	2		16	7		1.2590	1.0558	9.3516	0.2472	0.2275	2198.7342	0.0000		7	17.6	14.8	130.9	3.5	3.2	246.3
4000 gallon Water Truck	350	Diesel	4		16	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	66.9
R/T Forklift	200	Diesel	2		16	6		0.3311	0.0524	0.3883	0.0214	0.0197	56.1000	0.0047		6	4.0	0.6	4.7	0.3	0.2	5.4
															Total		**65.5**	**29.4**	**245.4**	**7.7**	**7.1**	**398.9**
															Total (tons)		**0.5**	**0.2**	**2.0**	**0.1**	**0.1**	
LST Steel Assembly -- (12)				**40**	**31**		**42 LST's**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	14.5	0.4	1.5	0.0	0.0	21.1
3/4-Ton Pick-up Truck, 4×4	300	Diesel	4		31	5	1.4 LSTs/Day	2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	20	5	2.5	0.1	0.3	0.0	0.0	8.9
1-Ton Crew Cab Flat Bed, 4×4	300	Diesel	6		31	5		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	5	1.1	0.2	1.1	0.2	0.2	6.7
R/T Forklift	125	Diesel	4		31	7		0.2158	0.0390	0.2571	0.0206	0.0190	31.2000	0.0035		7	6.0	1.1	7.2	0.6	0.5	13.5
R/T Crane (L)	300	Diesel	4		31	10		0.3243	0.1077	0.9866	0.0348	0.0320	125.6000	0.0097		10	13.0	4.3	39.5	1.4	1.3	77.9
Kaman K-MAX		Jet A	1		31	7		1.3532	1.1287	7.4027	0.2005	0.1845	1930.3207	0.0000		7	9.5	7.9	51.8	1.4	1.3	209.4
Compressor Trailer	120	Diesel	4		31	6		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		6	7.7	1.8	11.2	1.0	0.9	17.5
															Total		**54.2**	**15.8**	**112.6**	**4.6**	**4.2**	**354.9**
															Total (tons)		**0.8**	**0.2**	**1.7**	**0.1**	**0.1**	
LST Erection -- (13)				**48**	**21**		**42 LST's**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	17.4	0.5	1.8	0.0	0.0	17.1
3/4-Ton Pick-up Truck, 4×4	300	Diesel	8		21	8	2 LSTs/Day	2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	20	8	8.1	0.3	0.9	0.0	0.0	19.2
1-Ton Crew Cab Flat Bed, 4×4	300	Diesel	8		21	8		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	8	2.3	0.5	2.4	0.4	0.4	9.6
4000 gallon Water Truck	350	Diesel	4		21	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	87.8
R/T Crane (M)	215	Diesel	4		21	7		0.3745	0.0978	0.8256	0.0361	0.0332	97.2000	0.0088		7	10.5	2.7	23.1	1.0	0.9	28.6
R/T Crane (L)	350	Diesel	4		21	7		0.3669	0.1175	1.0644	0.0378	0.0348	139.2000	0.0106		7	10.3	3.3	29.8	1.1	1.0	40.9
															Total		**67.3**	**13.8**	**110.0**	**4.3**	**4.0**	**203.3**
															Total (tons)		**0.7**	**0.1**	**1.2**	**0.0**	**0.0**	
Install Tubular Steel Pole Foundations -- (14)				**24**	**1**		**1 TSP's**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	8.7	0.2	0.9	0.0	0.0	0.4
1-Ton Crew Cab Flat Bed, 4×4	300	Diesel	12		1	5		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	5	2.1	0.5	2.3	0.4	0.4	0.4
R/T Crane (M)	300	Diesel	4		1	7		0.3243	0.1077	0.9866	0.0348	0.0320	125.6000	0.0097		7	9.1	3.0	27.6	1.0	0.9	1.8
Backhoe/Front Loader	200	Diesel	4		1	10		0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		10	29.0	8.7	73.0	2.5	2.3	6.9

Auger Truck	500	Diesel	4			1	10	2.5 TSPs/Day	0.6134	0.2065	1.5945	0.0567	0.0522	272.0000	0.0186		10	24.5	8.3	63.8	2.3	2.1	5.4
4000 gallon Water Truck	350	Diesel	4			1	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	4.2
10-cu. yd. Dump Truck	350	Diesel	8			1	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	37.7	13.0	104.1	3.6	3.3	8.4
10-cu. yd. Concrete Mixer Truck	425	Diesel	12			1	6		0.6064	0.2032	1.8639	0.0630	0.0580	265.0000	0.0183		6	43.7	14.6	134.2	4.5	4.2	9.5
																Total		**175.6**	**54.8**	**457.9**	**18.1**	**14.8**	**32.0**
																Total (tons)		**0.1**	**0.0**	**0.2**	**0.0**	**0.0**	
Steel Pole Haul -- (15)				**8**		**1**		**1 TSP's**	3.2811	0.0973	0.3335	0.0038	0.0035	308.2709	0.0518	40	50	2.9	0.1	0.3	0.0	0.0	0.1
3/4-Ton Pick-up Truck, 4x4	300	Diesel	4			1	8		2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	20	8	4.0	0.1	0.4	0.0	0.0	0.5
4000 gallon Water Truck	350	Diesel	4			1	10	10 Steel Poles/Day	0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	4.2
R/T Crane (L)	350	Diesel	2			1	10		0.3669	0.1175	1.0644	0.0378	0.0348	139.2000	0.0106		10	7.3	2.3	21.3	0.8	0.7	1.4
40' Flat Bed Truck/ Trailer	350	Diesel	4			1	8		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		8	15.1	5.2	41.6	1.4	1.3	3.3
																Total		**48.2**	**14.3**	**115.7**	**4.0**	**3.7**	**9.5**
																Total (tons)		**0.0**	**0.0**	**0.1**	**0.0**	**0.0**	
Steel Pole Assembly -- (16)				**24**		**1**		**1 TSP's**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	8.7	0.2	0.9	0.0	0.0	0.4
3/4-Ton Pick-up Truck, 4x4	300	Diesel	8			1	8		2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090		8	182.8	6.6	20.1	0.3	0.3	20.7
4000 gallon Water Truck	350	Diesel	4			1	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	4.2
1-Ton Crew Cab Flat Bed, 4x4	300	Diesel	8			1	6	5 Steel Poles/Day	0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	6	1.7	0.4	1.8	0.3	0.3	0.3
Compressor Trailer	120	Diesel	4			1	6		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		6	7.7	1.8	11.2	1.0	0.9	0.6
R/T Crane (L)	350	Diesel	4			1	6		0.3669	0.1175	1.0644	0.0378	0.0348	139.2000	0.0106		6	8.8	2.8	25.5	0.9	0.8	1.7
																Total		**220.8**	**18.4**	**111.8**	**4.3**	**3.9**	**27.9**
																Total (tons)		**0.1**	**0.0**	**0.1**	**0.0**	**0.0**	
Steel Pole Erection -- (17)				**24**		**1**		**1 TSP's**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	8.7	0.2	0.9	0.0	0.0	0.4
3/4-Ton Pick-up Truck, 4x4	300	Diesel	8			1	5		2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090		5	114.3	4.1	12.6	0.2	0.2	13.0
1-Ton Crew Cab Flat Bed, 4x4	300	Diesel	8			1	5		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	5	1.4	0.3	1.5	0.3	0.2	0.3
4000 gallon Water Truck	350	Diesel	4			1	10	5 Steel Poles/Day	0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	4.2
Compressor Trailer	120	Diesel	4			1	5		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		5	6.4	1.5	9.4	0.8	0.8	0.5
R/T Crane (L)	350	Diesel	4			1	6		0.3669	0.1175	1.0644	0.0378	0.0348	139.2000	0.0106		6	8.8	2.8	25.5	0.9	0.8	1.7
																Total		**158.4**	**15.5**	**101.9**	**4.0**	**3.7**	**20.0**
																Total (tons)		**0.1**	**0.0**	**0.1**	**0.0**	**0.0**	
H-Frame Installation -- (18)				**12**		**5**		**1 Structures**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	4.3	0.1	0.4	0.0	0.0	1.0
3/4-Ton Pick-up Truck, 4x4	300	Diesel	4			5	8		2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	20	8	4.0	0.1	0.4	0.0	0.0	2.3
1-Ton Crew Cab Flat Bed, 4x4	300	Diesel	2			5	8		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	8	0.6	0.1	0.6	0.1	0.1	0.6
Compressor Trailer	120	Diesel	2			5	7		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		7	4.5	1.1	6.6	0.6	0.5	1.6
Auger Truck	500	Diesel	2			5	5		0.6134	0.2065	1.5945	0.0567	0.0522	272.0000	0.0186		5	6.1	2.1	15.9	0.6	0.5	6.8
Extendable Flat Bed Pole Truck	350	Diesel	2			5	8		0.4710	0.1672	1.3007	0.0448	0.0412	209.0000	0.0146		8	7.5	2.6	20.8	0.7	0.7	8.4
R/T Crane (M)	500	Diesel	2			5	8		0.4948	0.1468	1.2979	0.0470	0.0432	180.0000	0.0132		8	7.9	2.3	20.6	0.8	0.7	7.2
Water Truck	350	Diesel	1			5	8		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		8	3.8	1.3	10.4	0.4	0.3	4.2
Extendable Flat Bed Pole Truck	350	Diesel	2			5	8		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		8	7.5	2.6	20.8	0.7	0.7	8.4
																Total		46.3	12.4	96.8	3.8	3.5	40.4
																Total (tons)		**0.1**	**0.0**	**0.2**	**0.0**	**0.0**	
Install Conductor -- (19)				**220**		**9**		**13 Circuit Miles**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	79.6	2.2	8.1	0.1	0.1	33.6
3/4-Ton Pick-up Truck, 4x4	300	Diesel	4		4	9	10		2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	40	50	2.8	0.1	0.3	0.0	0.0	1.3
1-Ton Crew Cab Flat Bed, 4x4	300	Diesel	8			9	10		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	10	2.9	0.6	3.0	0.5	0.5	5.2
Wire Truck/Trailer	350	Diesel	4			6	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	25.1
R/T Crane (M)	215	Diesel	4			9	10		0.3745	0.0978	0.8256	0.0361	0.0332	97.2000	0.0088		10	15.0	3.9	33.0	1.4	1.3	17.5
Dump Truck	350	Diesel	2			9	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	9.4	3.2	26.0	0.9	0.8	18.8
Bucket Truck	350	Diesel	4			9	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	37.6
22-Ton Manitex	350	Diesel	4			9	10		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		10	12.3	4.4	43.6	1.4	1.3	24.5
Splicing Rig	350	Diesel	2			2	5		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		5	3.1	1.1	10.9	0.3	0.3	1.4
Splicing Lab	300	Diesel	2			2	5	1.6 Miles/Day	0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		5	3.1	1.1	10.9	0.3	0.3	1.4
Sock Line Puller	300	Diesel	2			2	6		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		6	3.7	1.3	13.1	0.4	0.4	1.6
Bull Wheel Puller	350	Diesel	2			5	10		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		10	6.2	2.2	21.8	0.7	0.6	6.8
Backhoe/Front Loader	125	Diesel	2			5	8		0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		8	11.6	3.5	29.2	1.0	0.9	13.8
D8 Cat	350	Diesel	1			5	8		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		8	2.5	0.9	8.7	0.3	0.3	2.7
Hughes 500 E Helicopter		Jet A	2			5	7		2.1989	1.7655	1.4214	0.0445	0.0409	763.4927	0.0300		7	30.8	24.7	19.9	0.6	0.6	26.7
Fuel, Helicopter Support Truck	300	Diesel	2			5	7		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		7	4.3	1.6	15.3	0.5	0.4	4.8
Sag Cat w/ 2 winches	350	Diesel	1			2	10		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		10	3.1	1.1	10.9	0.3	0.3	1.4
Static Truck/ Tensioner	350	Diesel	2			5	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	9.4	3.2	26.0	0.9	0.8	10.5
																Total		**237.3**	**88.3**	**384.8**	**13.4**	**12.3**	**234.5**
																Total (tons)		**0.6**	**0.2**	**1.0**	**0.0**	**0.0**	
Guard Structure Removal -- (20)				**12**		**4**		**60 Structures**	3.2811	0.0973	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	4.3	0.1	0.4	0.0	0.0	0.8
3/4-Ton Pick-up Truck, 4x4	300	Diesel	4			4	7		2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	40	50	1.3	0.0	0.1	0.0	0.0	0.0
1-Ton Crew Cab Flat Bed, 4x4	300	Diesel	4			4	7		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	7	1.0	0.2	1.1	0.2	0.2	0.8
Compressor Trailer	120	Diesel	4			4	7		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		7	9.0	2.1	13.1	1.2	1.1	2.6
Extendable Flat Bed Pole Truck	350	Diesel	4			4	6	17.2 Structures/Day	0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		6	11.3	3.9	31.2	1.1	1.0	10.0
Water Truck	300	Diesel	2			4	10		0.4236	0.1474	1.2027	0.0408	0.0375	188.0000	0.0133		10	8.5	2.9	24.1	0.8	0.8	7.5
R/T Crane (M)	500	Diesel	2			4	8		0.4948	0.1468	1.2979	0.0470	0.0432	180.0000	0.0132		8	7.9	2.3	20.8	0.8	0.7	5.8
80ft. Hydraulic Man-lift / Bucket Truck	350	Diesel	2			4	4		0.3637	0.0870	0.9773	0.0354	0.0326	143.9610	0.0079		4	2.9	0.7	7.8	0.3	0.3	2.3
																Total		**46.2**	**12.4**	**98.6**	**4.3**	**3.9**	**20.9**
																Total (tons)		**0.1**	**0.0**	**0.2**	**0.0**	**0.0**	
Restoration -- (21)				**14**		**2**		**3.5 Miles**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	5.1	0.1	0.5	0.0	0.0	0.5
1-Ton Crew Cab, 4x4	300	Diesel	4			2	2		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	2	0.3	0.1	0.3	0.1	0.0	0.1

Motor Grader	350	Diesel	2		2	6		0.5992	0.1759	1.5242	0.0550	0.0506	229.0000	0.1398		6	7.2	2.1	18.3	0.7	0.6	2.7
Water Truck	350	Diesel	2		2	8		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		8	7.5	2.6	20.8	0.7	0.7	3.3
Backhoe/Front Loader	350	Diesel	2		2	6	2.5 Miles/Day	0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		6	8.7	2.6	21.9	0.8	0.7	4.1
Drum Type Compactor	250	Diesel	2		2	6		0.3595	0.1207	1.1333	0.0429	0.0395	122.2913	0.0109		6	4.3	1.4	13.6	0.5	0.5	1.5
Track Type Dozer	350	Diesel	2		2	6		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236		6	11.1	3.1	26.3	1.1	1.0	2.6
Lowboy Truck/Trailer	300	Diesel	2		2	3		0.4236	0.1474	1.2027	0.0408	0.0375	188.0000	0.0133		3	2.5	0.9	7.2	0.2	0.2	1.1
															Total		**46.7**	**13.0**	**109.0**	**4.0**	**3.7**	**16.0**
															Total (tons)		**0.0**	**0.0**	**0.1**	**0.0**	**0.0**	
Retaining walls – (22)				**100**	**23**		**5 Walls**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	36.2	1.0	3.7	0.0	0.0	39.1
1-Ton Crew Cab, 4×4	300	Diesel	4		23	10		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	10	1.4	0.3	1.5	0.3	0.2	6.6
Motor Grader	250	Diesel	2		23	10		0.5992	0.1759	1.5242	0.0550	0.0506	229.0000	0.1398		10	12.0	3.5	30.5	1.1	1.0	52.7
Water Truck	350	Diesel	2		23	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	9.4	3.2	26.0	0.9	0.8	48.1
Backhoe/Front Loader	125	Diesel	2		23	10		0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		10	14.5	4.4	36.5	1.3	1.2	79.4
Drum Type Compactor	250	Diesel	2		23	10	4.8 days/wall	0.3595	0.1207	1.1333	0.0429	0.0395	122.2913	0.0109		10	7.2	2.4	22.7	0.9	0.8	28.1
Track Type Dozer	350	Diesel	2		23	10		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236		10	18.5	5.2	43.9	1.8	1.7	49.6
Concrete Mixer	350	Diesel	2		23	10		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		10	6.2	2.2	21.8	0.7	0.6	31.3
Excavator	250	Diesel	2		23	10		0.5102	0.1657	1.3127	0.0023	0.0021	174.0000	0.0115		10	10.2	3.3	26.3	0.0	0.0	40.0
Dump Truck	350	Diesel	2		23	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	9.4	3.2	26.0	0.9	0.8	48.1
Lowboy Truck/Trailer	300	Diesel	2		23	10		0.4236	0.1474	1.2027	0.0408	0.0375	188.0000	0.0133		10	8.5	2.9	24.1	0.8	0.8	43.2
															Total		**133.4**	**31.8**	**262.9**	**8.7**	**8.0**	**466.1**
															Total (tons)		**1.3**	**0.4**	**8.0**	**0.1**	**0.1**	
															Grand Total (lb/day)		2250.0	525.9	4009.0	147.7	135.9	
															Grand Total (tons)		9.7	2.6	20.9	0.8	0.7	3924.3

Subtransmission Construction (Segment 1) Equipment and Workforce Estimates

Primary Equipment	Estimated Horse-Power	Probable Fuel Type	Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (hrs./day)	Estimated Production Per Day															
Survey (1)				4	**6**		**5.3 Miles**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	1.4	0.0	0.1	0.0	0.0	0.4
1-Ton Truck, 4×4	300	Gas	2		6	8	1 Mile	0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	8	0.6	0.1	0.6	0.1	0.1	0.7
															Total		**2.0**	**0.2**	**0.8**	**0.1**	**0.1**	**1.1**
															Total (tons)		**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	
Marshaling Yard (2)				4			**1 Yard**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	1.4	0.0	0.1	0.0	0.0	0.0
1-Ton Truck, 4×4	300	Gas	1		2	4		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	4	0.1	0.0	0.2	0.0	0.0	0.1
R/T Forklift	125	Diesel	1		2	6		0.2158	0.0390	0.2571	0.0206	0.1358	31.2000	0.0035		6	1.3	0.2	1.5	0.1	0.8	0.2
Boom/Crane Truck	350	Diesel	1		2	2	5 Acres	0.3669	0.1175	1.0644	0.0378	0.0348	139.2000	0.0106		2	0.7	0.2	2.1	0.1	0.1	0.3
Water Truck	300	Diesel	1		2	8		0.4236	0.1474	1.2027	0.0408	0.0375	188.0000	0.0133		8	3.4	1.2	9.6	0.3	0.3	1.5
Truck, Semi Tractor	400	Diesel	1		2	2		0.5185	0.1769	1.3986	0.0487	0.0448	230.0000	0.0160		2	1.0	0.4	2.8	0.1	0.1	0.5
															Total		**8.0**	**2.1**	**16.4**	**0.7**	**1.3**	**2.5**
															Total (tons)		**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	
R/W Clearing (3)				**5**	**14**		**3.3 Miles**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	1.8	0.1	0.2	0.0	0.0	1.2
1-Ton Truck, 4×4	300	Gas	1		14	8		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	8	0.3	0.1	0.3	0.1	0.0	0.8
Backhoe/Front Loader	125	Diesel	1		14	6		0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		6	4.3	1.3	11.0	0.4	0.3	14.5
Track Type Dozer	150	Diesel	1		14	6	0.25 Mile	0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236		6	5.6	1.6	13.2	0.5	0.5	9.1
Motor Grader	250	Diesel	1		14	6		0.5992	0.1759	1.5242	0.0550	0.0506	229.0000	0.1398		6	3.6	1.1	9.1	0.3	0.3	9.6
Water Truck	300	Diesel	1		14	8		0.4236	0.1474	1.2027	0.0408	0.0375	188.0000	0.0133		8	3.4	1.2	9.6	0.3	0.3	10.5
Lowboy Truck/Trailer	450	Diesel	1		14	4		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236		4	3.7	1.0	8.8	0.4	0.3	6.0
															Total		**22.7**	**6.3**	**52.2**	**2.0**	**1.8**	**51.7**
															Total (tons)		**0.2**	**0.0**	**0.4**	**0.0**	**0.0**	
Roads & Landing Work (4)				**5**	**4**		**2 Miles & 9 Pads**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	1.8	0.1	0.2	0.0	0.0	0.3
1-Ton Truck, 4×4	300	Gas	1		4	8	Existing Roads:	0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	8	0.3	0.1	0.3	0.1	0.0	0.2
Backhoe/Front Loader	125	Diesel	1		4	4	2 Miles	0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		4	2.9	0.9	7.3	0.3	0.2	2.8
Track Type Dozer	150	Diesel	1		4	4	Structure Pads (Flat to Mod): 4 Pads	0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236		4	3.7	1.0	8.8	0.4	0.3	1.7
Motor Grader	250	Diesel	1		4	6		0.5992	0.1759	1.5242	0.0550	0.0506	229.0000	0.1398		6	3.6	1.1	9.1	0.3	0.3	2.7
Water Truck	300	Diesel	1		4	8		0.4236	0.1474	1.2027	0.0408	0.0375	188.0000	0.0133		8	3.4	1.2	9.6	0.3	0.3	3.0
Drum Type Compactor	100	Diesel	1		4	6		0.3595	0.1207	1.1333	0.0429	0.0395	122.2913	0.0109		6	2.2	0.7	6.8	0.3	0.2	1.5
Excavator	250	Diesel	1		3	4		0.5102	0.1657	1.3127	0.0023	0.0021	174.0000	0.0115		4	2.0	0.7	5.3	0.0	0.0	1.0
Lowboy Truck/Trailer	450	Diesel	1		4	4		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236		4	3.7	1.0	8.8	0.4	0.3	1.7
															Total		**23.6**	**6.7**	**56.2**	**2.0**	**1.8**	**15.0**
															Total (tons)		**0.0**	**0.0**	**0.1**	**0.0**	**0.0**	
Guard Structure Installation (5)				**6**	**14**		**70 Structures**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	2.2	0.1	0.2	0.0	0.0	1.4
3/4 Ton Truck, 4×4	275	Gas	1	1	14	8		2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	40	50	6.3	0.2	0.7	0.0	0.0	20.0
1-Ton Truck, 4×4	300	Gas	1		14	8		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	8	0.3	0.1	0.3	0.1	0.0	0.8
Compressor Trailer	60	Diesel	1		14	4		0.3216	0.0758	0.4682	0.0416	0.0383	46.9602	0.0068		4	1.3	0.3	1.9	0.2	0.2	1.3
Manlift/Bucket Truck	250	Diesel	1		14	4	5 Structures	0.3099	0.0713	0.7059	0.0319	0.0293	97.9342	0.0065		4	1.2	0.3	2.8	0.1	0.1	2.7
Boom/Crane Truck	350	Diesel	1		14	6		0.3669	0.1175	1.0644	0.0378	0.0348	139.2000	0.0106		6	2.2	0.7	6.4	0.2	0.2	5.8
Auger Truck	210	Diesel	1		14	4		0.6134	0.2065	1.5945	0.0567	0.0522	272.0000	0.0186		4	2.5	0.8	6.4	0.2	0.2	7.6
Extendable Flat Bed Pole Truck	400	Diesel	1		14	8		0.5185	0.1769	1.3986	0.0487	0.0448	230.0000	0.0160		8	4.1	1.4	11.2	0.4	0.4	12.9
															Total		**20.1**	**3.9**	**29.9**	**1.2**	**1.1**	**52.6**
															Total (tons)		**0.1**	**0.0**	**0.2**	**0.0**	**0.0**	
Remove Existing Conductor & GW (6)				14	**8**		**4 Circuit Miles**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	5.1	0.1	0.5	0.0	0.0	1.9

1-Ton Truck, 4x4	300	Gas	2		6	4		0.7994	0.1746	0.8563	0.1476	0.1356	325.6138	0.0649	20	4	0.3	0.1	0.3	0.1	0.0	0.5
Manlift/Bucket Truck	250	Diesel	2		8	8	Non-Bundled:	0.3099	0.0713	0.7059	0.0319	0.0293	97.9342	0.0065		8	5.0	1.1	11.3	0.5	0.5	6.3
Boom/Crane Truck	350	Diesel	2		8	8	0.5 Mile	0.3669	0.1175	1.0644	0.0378	0.0348	139.2000	0.0106		8	5.9	1.9	17.0	0.6	0.6	8.9
Bull Wheel Puller	350	Diesel	1		6	6		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		6	1.8	0.7	6.5	0.2	0.2	2.4
Sock Line Puller	300	Diesel	1		6	6		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		6	1.8	0.7	6.5	0.2	0.2	2.4
Static Truck/ Tensioner	350	Diesel	1		8	6		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		6	2.8	1.0	7.8	0.3	0.2	5.0
Lowboy Truck/Trailer	450	Diesel	2		8	4		0.9259	0.2622	2.1947	0,0916	0.0843	215.8000	0.0236		4	7,4	2,1	17.6	0.7	0.7	6.9
															Total		**30.1**	**7.6**	**67.6**	**2.6**	**2.4**	**34.4**
															Total (tons)		**0.1**	**0.0**	**0.3**	**0.0**	**0.0**	
Wood/LWS Pole Removal (7)				**6**	**4**		**28 Poles**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	2.2	0.1	0.2	0.0	0.0	0.4
1-Ton Truck, 4x4	300	Gas	2		4	8		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	8	0.6	0.1	0.6	0.1	0.1	0.5
Compressor Trailer	60	Diesel	1		4	4		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0,0068		4	1.3	0.3	1.9	0.2	0.2	0.4
Manlift/Bucket Truck	250	Diesel	1		4	6	9 Poles	0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		6	1.9	0.5	2.8	0.2	0.2	0.6
Boom/Crane Truck	350	Diesel	1		4	6		0.3669	0.1175	1.0644	0.0378	0.0348	139.2000	0.0106		6	2.2	0.7	6.4	0.2	0.2	1,7
Flat Bed Pole Truck	400	Diesel	1		4	8		0.5185	0.1769	1.3986	0.0487	0.0448	230.0000	0.0160		8	4.1	1.4	11.2	0.4	0.4	3.7
															Total		**12.3**	**3.1**	**23.1**	**1.1**	**1.0**	**7.2**
															Total (tons)		**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	
LST Removal (8)				**6**	**18**		**9 LSTs**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0516	40	50	2.2	0.1	0.2	0.0	0.0	1.8
1-Ton Truck, 4x4	300	Gas	2		18	4		0,7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	4	0.3	0.1	0.3	0.1	0.0	1.0
Compressor Trailer	60	Diesel	1		18	8		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068	40	50	0.6	0.2	0.9	0.1	0.1	0.0
R/T Crane (M)	215	Diesel	1		18	6	0.5 LSTs	0.3745	0.0978	0.8256	0.0361	0.0332	97.2000	0.0088		6	2.2	0.6	5.0	0.2	0.2	5.2
Boom/Crane Truck	350	Diesel	1		18	6		0.3669	0.1175	1.0644	0.0378	0.0348	139.2000	0.0106		6	2.2	0.7	6.4	0.2	0.2	7.5
Flat Bed Truck/Trailer	400	Diesel	1		16	4		0.5185	0.1769	1.3986	0.0487	0.0448	230.0000	0.0160		4	2.1	0.7	5.6	0.2	0.2	8.3
															Total		**9.6**	**2.3**	**16.4**	**0.6**	**0.7**	**23.9**
															Total (tons)		**0.1**	**0.0**	**0.2**	**0.0**	**0.0**	
LST Foundation Removal (9)				**4**	**5**		**9 LSTs**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	1.4	0.0	0.1	0.0	0.0	0.3
3/4-Ton Truck, 4x4	275	Gas	1		5	4		2.6566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	40	50	1.6	0.1	0.2	0.0	0.0	0.0
Compressor Trailer	60	Diesel	1		5	8		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		8	2.6	0.6	3.7	0.3	0.3	0.9
Backhoe/Front Loader	125	Diesel	1		5	6	2 LSTs	0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		6	4.3	1.3	11.0	0.4	0.3	5.2
Dump Truck	350	Diesel	1		5	6		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		6	2.8	1.0	7.6	0.3	0.2	3.1
Excavator	250	Diesel	1		5	4		0.5102	0.1657	1.3127	0.0023	0.0021	174.0000	0.0115		4	2.0	0.7	5.3	0.0	0.0	1.7
															Total		**14.8**	**3.7**	**28.1**	**1.0**	**0.9**	**11.3**
															Total (tons)		**0.0**	**0,0**	**0.1**	**0.0**	**0.0**	
Install TSP Foundations (10)				**6**	**54**		**26 TSPs**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	2.2	0.1	0.2	0.0	0.0	5.5
3/4-Ton Truck, 4x4	275	Gas	1		54	4		2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	40	50	17.0	0.6	1.9	0.0	0.0	0.0
Boom/Crane Truck	350	Diesel	1		54	4	0.5 TSPs	0.3669	0.1175	1.0644	0.0378	0.0348	139.2000	0.0106		4	1.5	0.5	4.3	0.2	0.1	15.0
Backhoe/Front Loader	125	Diesel	1		54	6		0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		6	4.3	1.3	11.0	0.4	0.3	55.9
Auger Truck	210	Diesel	1		21	6		0.6134	0.2065	1.5945	0.0567	0.0522	272.0000	0.0186		6	3.7	1.2	9.6	0.3	0.3	17.1
Water Truck	300	Diesel	1		49	8		0.4236	0.1474	1.2027	0.0408	0.0375	188.0000	0.0133		8	3.4	1.2	9.6	0.3	0.3	36.8
Dump Truck	350	Diesel	1		49	4		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		4	1.9	0.6	5.2	0.2	0.2	20.5
Concrete Mixer Truck	350	Diesel	3		33	2		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		2	2.8	1.0	7.8	0.3	0.2	20.7
															Total		**36.8**	**8.5**	**40.5**	**1.7**	**1.5**	**171.8**
															Total (tons)		**0.6**	**0.1**	**0.8**	**0.0**	**0.0**	
TSP Haul (11)				**4**	**7**		**26 TSPs**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	1.4	0.0	0.1	0.0	0.0	0.5
3/4-Ton Truck, 4x4	275	Gas	1		7	8		2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	40	50	2.2	0.1	0.2	0.0	0.0	0.0
Boom/Crane Truck	350	Diesel	1		7	6	4 TSPs	0.3669	0.1175	1.0644	0.0378	0.0348	139.2000	0.0106		6	2.2	0.7	6.4	0.2	0.2	2.9
Flat Bed Pole Truck	400	Diesel	1		7	8		0.5185	0.1769	1.3986	0.0487	0.0448	230.0000	0.0160		8	4.1	1.4	11.2	0.4	0.4	6.4
															Total		**10.0**	**2.2**	**18.0**	**0.8**	**0.6**	**9.8**
															Total (tons)		**0.0**	**0.0**	**0.1**	**0.0**	**0.0**	
TSP Assembly (12)				**8**	**26**		**26 TSPs**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	2.9	0.1	0.3	0.0	0.0	3.5
3/4-Ton Truck, 4x4	275	Gas	2		26	4		2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	40	50	8.2	0.3	0.9	0.0	0.0	0.0
1 Ton Truck, 4x4	300	Gas	2		26	4	1 TSP	0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	4	0.3	0.1	0.3	0.1	0.0	1.5
Compressor Trailer	60	Diesel	1		26	6		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		6	1.9	0.5	2.8	0.2	0.2	3.7
Boom/Crane Truck	350	Diesel	1		26	8		0.3669	0.1175	1.0644	0.0378	0.0348	139.2000	0.0106		8	2.9	0.9	8.5	0.3	0.3	14.5
															Total		**18.2**	**1.8**	**12.8**	**0.6**	**0.8**	**23.2**
															Total (tons)		**0.2**	**0.0**	**0.2**	**0.0**	**0.0**	
TSP Eraction (13)				**8**	**26**		**26 TSPs**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	2.9	0.1	0.3	0.0	0.0	3.5
3/4 Ton Truck, 4x4	275	Gas	2		26	4		2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	40	50	8.2	0.3	0.9	0.0	0.0	0.0
1-Ton Truck, 4x4	300	Gas	2		26	4	1 TSP	0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	4	0.3	0.1	0.3	0.1	0.0	1.5
Compressor Trailer	60	Diesel	1		26	4		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		4	1.3	0.3	1.9	0.2	0.2	2.4
Boom/Crane Truck	350	Diesel	1		26	8		0.3669	0.1175	1.0644	0.0378	0.0348	139.2000	0.0106		8	2.9	0.9	8.5	0.3	0.3	14.5
															Total		**15.6**	**1.7**	**11.9**	**0.5**	**0.5**	**21.9**
															Total (tons)		**0.2**	**0.0**	**0.2**	**0.0**	**0.0**	
LWS Pole Haul (14)				**4**	**27**		**154 LWS Poles**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	1.4	0.0	0.1	0.0	0.0	1.8
3/4-Ton Truck, 4x4	275	Gas	1		27	8		2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	40	50	8.5	0.3	0.9	0.0	0.0	0.0
Boom/Crane Truck	350	Diesel	1		27	6	6 Poles	0.3669	0.1175	1.0644	0.0378	0.0348	139.2000	0.0106		6	2.2	0.7	6.4	0.2	0.2	11.3
Flat Bed Pole Truck	400	Diesel	1		27	8		0.5185	0.1769	1.3986	0.0487	0.0448	230.0000	0.0160		8	4.1	1.4	11.2	0.4	0.4	24.8
															Total		**16.3**	**2.5**	**18.7**	**0.8**	**0.6**	**37.9**
															Total (tons)		**0.2**	**0.0**	**0.3**	**0.0**	**0.0**	
LWS Pole Assembly (15)				**8**	**39**		**154 LWS Poles**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	2.9	0.1	0.3	0.0	0.0	5.3
3/4-Ton Truck, 4x4	275	Gas	2		39	4		2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	40	50	12.3	0.4	1.4	0.0	0.0	0.0

1-Ton Truck, 4×4	300	Gas	2		39	4	4 Poles	0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	4	0.3	0.1	0.3	0.1	0.0	2.2
Compressor Trailer	60	Diesel	1		39	6		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		6	1.9	0.5	2.8	0.2	0.2	5.5
Boom/Crane Truck	350	Diesel	1		39	8		0.3669	0.1175	1.0644	0.0378	0.0348	139.2000	0.0106		8	2.9	0.9	8.5	0.3	0.3	21.7
															Total		**20.3**	**2.0**	**13.3**	**0.6**	**0.6**	**34.7**
															Total (tons)		**0.4**	**0.0**	**0.3**	**0.0**	**0.0**	
Install LWS Pole (16)				**6**	**39**		**154 Poles**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	2.2	0.1	0.2	0.0	0.0	4.0
1-Ton Truck, 4×4	300	Gas	1		39	8	4 Poles	0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	8	0.3	0.1	0.3	0.1	0.0	2.2
Manlift/Bucket Truck	250	Diesel	1		39	6		0.3099	0.0713	0.7059	0.0319	0.0293	97.9342	0.0065		6	1.9	0.4	4.2	0.2	0.2	11.5
Boom/Crane Truck	350	Diesel	1		39	6		0.3669	0.1175	1.0644	0.0378	0.0348	139.2000	0.0106		6	2.2	0.7	6.4	0.2	0.2	16.3
Auger Truck	210	Diesel	1		39	4		0.6134	0.2065	1.5945	0.0567	0.0522	272.0000	0.0186		4	2.5	0.8	6.4	0.2	0.2	21.2
Backhoe/Front Loader	125	Diesel	1		39	8		0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		8	5.8	1.7	14.6	0.5	0.5	53.8
Extendable Flat Bed Pole Truck	400	Diesel	1		39	8		0.5185	0.1769	1.3986	0.0487	0.0448	230.0000	0.0160		8	4.1	1.4	11.2	0.4	0.4	35.9
															Total		**18.9**	**5.2**	**43.3**	**1.8**	**1.5**	**144.9**
															Total (tons)		**0.4**	**0.1**	**0.8**	**0.0**	**0.0**	
Install Conductor (17)				**20**	**13**		**4.3 Circuit Miles**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	7.2	0.2	0.7	0.0	0.0	4.4
1-Ton Truck, 4×4	300	Gas	3		13	4		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	4	0.4	0.1	0.5	0.1	0.1	1.1
Manlift/Bucket Truck	250	Diesel	4		13	8	0.33 Mile	0.3099	0.0713	0.7059	0.0319	0.0293	97.9342	0.0065		8	9.9	2.3	22.6	1.0	0.9	20.4
Boom/Crane Truck	350	Diesel	1		13	8		0.3669	0.1175	1.0644	0.0378	0.0348	139.2000	0.0106		8	2.9	0.9	8.5	0.3	0.3	7.2
Dump Truck	350	Diesel	1		13	2		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		2	0.9	0.3	2.6	0.1	0.1	2.7
Wire Truck/Trailer	350	Diesel	2		13	6		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		6	5.7	1.9	15.6	0.5	0.5	16.3
Sock Line Puller	300	Diesel	1		5	6		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		6	1.8	0.7	6.5	0.2	0.2	2.0
Bull Wheel Puller	350	Diesel	1		9	6		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		6	1.8	0.7	6.5	0.2	0.2	3.7
Static Truck/ Tensioner	350	Diesel	1		13	6		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		6	2.8	1.0	7.8	0.3	0.2	8.2
Backhoe/Front Loader	125	Diesel	1		13	2		0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		2	1.4	0.4	3.7	0.1	0.1	4.5
Lowboy Truck/Trailer	450	Diesel	2		13	4		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236		4	7.4	2.1	17.6	0.7	0.7	11.2
Hughes 500 E Helicopter		Jet A	1		4	6		2.1989	1.7655	1.4214	0.0445	0.0409	763.4927	0.0000		6	13.2	10.6	8.5	0.3	0.2	9.2
Fuel, Helicopter Support Truck	300	Diesel	1		4	6		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		6	1.8	0.7	6.5	0.2	0.2	1.6
															Total		**57.5**	**21.9**	**107.7**	**4.1**	**3.7**	**92.5**
															Total (tons)		**0.1**	**0.0**	**0.2**	**0.0**	**0.0**	
Guard Structure Removal (18)				**6**	**10**		**70 Structures**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	2.2	0.1	0.2	0.0	0.0	1.0
3/4-Ton Truck, 4×4	275	Gas	1		10	8		2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	40	50	3.1	0.1	0.3	0.0	0.0	0.0
1-Ton Truck, 4×4	300	Gas	1		10	8		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	8	0.3	0.1	0.3	0.1	0.0	0.6
Compressor Trailer	60	Diesel	1		10	4	7 Structures	0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		4	1.3	0.3	1.9	0.2	0.2	0.9
Manlift/Bucket Truck	250	Diesel	1		10	4		0.3099	0.0713	0.7059	0.0319	0.0293	97.9342	0.0065		4	1.2	0.3	2.8	0.1	0.1	2.0
Boom/Crane Truck	350	Diesel	1		10	6		0.3669	0.1175	1.0644	0.0378	0.0348	139.2000	0.0106		6	2.2	0.7	6.4	0.2	0.2	4.2
Extendable Flat Bed Pole Truck	400	Diesel	1		10	8		0.5185	0.1769	1.3986	0.0487	0.0448	230.0000	0.0160		8	4.1	1.4	11.2	0.4	0.4	9.2
															Total		**14.5**	**2.9**	**23.1**	**1.0**	**0.8**	**17.9**
															Total (tons)		**0.1**	**0.0**	**0.1**	**0.0**	**0.0**	
Restoration (19)				**7**	**4**		**3.3 Miles**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	2.5	0.1	0.3	0.0	0.0	0.5
1-Ton Truck, 4×4	300	Gas	2		4	4		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	4	0.3	0.1	0.3	0.1	0.0	0.2
Backhoe/Front Loader	125	Diesel	1		4	4		0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		4	2.9	0.9	7.3	0.3	0.2	2.8
Motor Grader	250	Diesel	1		4	6	1 Mile	0.5992	0.1759	1.5242	0.0550	0.0506	229.0000	0.1398		6	3.6	1.1	9.1	0.3	0.3	2.7
Water Truck	300	Diesel	1		4	8		0.4236	0.1474	1.2027	0.0408	0.0375	188.0000	0.0133		8	3.4	1.2	9.6	0.3	0.3	3.0
Drum Type Compactor	100	Diesel	1		4	4		0.3595	0.1207	1.1333	0.0429	0.0395	122.2913	0.0109		4	1.4	0.5	4.5	0.2	0.2	1.0
Lowboy Truck/Trailer	450	Diesel	1		4	4		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236		4	3.7	1.0	8.8	0.4	0.3	1.7
															Total		**17.8**	**4.8**	**39.9**	**1.5**	**1.4**	**11.9**
															Total (tons)		**0.0**	**0.0**	**0.1**	**0.0**	**0.0**	
Vault Installation (20)				**6**	**27**		**9 Vaults**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	2.2	0.1	0.2	0.0	0.0	2.8
1-Ton Truck, 4×4	300	Gas	2		27	4		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	4	0.3	0.1	0.3	0.1	0.0	1.6
Backhoe/Front Loader	125	Diesel	1		27	8		0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		8	5.8	1.7	14.6	0.5	0.5	37.3
Excavator	250	Diesel	1		14	6		0.5102	0.1657	1.3127	0.0023	0.0021	174.0000	0.0115		6	3.1	1.0	7.9	0.0	0.0	7.3
Dump Truck	350	Diesel	2		27	8		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		8	7.5	2.6	20.8	0.7	0.7	45.1
Water Truck	300	Diesel	1		27	8	0.33 Vaults	0.4236	0.1474	1.2027	0.0408	0.0375	188.0000	0.0133		8	3.4	1.2	9.6	0.3	0.3	20.3
Crane (L)	500	Diesel	1		9	6		0.4948	0.1468	1.2979	0.0470	0.0432	180.0000	0.0132		6	3.0	0.0	7.8	0.3	0.3	4.9
Concrete Mixer Truck	350	Diesel	3		14	2		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		2	2.8	1.0	7.8	0.3	0.2	8.8
Lowboy Truck/Trailer	450	Diesel	1		9	4		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236		4	3.7	1.0	8.8	0.4	0.3	3.0
Flat Bed Truck/Trailer	400	Diesel	3		9	4		0.5185	0.1769	1.3986	0.0487	0.0448	230.0000	0.0160		4	6.2	2.1	16.8	0.6	0.5	12.4
															Total		**38.0**	**11.7**	**94.6**	**3.1**	**2.9**	**144.3**
															Total (tons)		**0.2**	**0.1**	**0.4**	**0.0**	**0.0**	
Duct Bank Installation (21)				**6**	**22**		**5380 Trench Feet**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	2.2	0.1	0.2	0.0	0.0	2.2
1-Ton Truck, 4×4	300	Gas	2		22	4		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	4	0.3	0.1	0.3	0.1	0.0	1.3
Compressor Trailer	60	Diesel	1		22	4		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		4	1.3	0.3	1.9	0.2	0.2	2.1
Backhoe/Front Loader	125	Diesel	1		22	6		0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		6	4.3	1.3	11.0	0.4	0.3	22.8
Dump Truck	350	Diesel	2		22	6	250 Feet	0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		6	5.7	1.9	15.6	0.5	0.5	27.6
Pipe Truck/Trailer	275	Diesel	1		22	6		0.3761	0.1326	1.1048	0.0368	0.0339	167.0000	0.0120		6	2.3	0.8	6.6	0.2	0.2	11.0
Water Truck	300	Diesel	1		72	8		0.4236	0.1474	1.2027	0.0408	0.0375	188.0000	0.0133		8	3.4	1.2	9.6	0.3	0.3	16.5
Concrete Mixer Truck	350	Diesel	3		22	2		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		2	2.8	1.0	7.8	0.3	0.2	13.8
Lowboy Truck/Trailer	450	Diesel	1		8	4		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236		4	3.7	1.0	8.8	0.4	0.3	3.5
															Total		**25.9**	**7.7**	**61.8**	**2.3**	**2.1**	**100.7**
															Total (tons)		**0.1**	**0.0**	**0.2**	**0.0**	**0.0**	
Install Underground Cable (22)				**8**	**3**		**1 Circuit Miles**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	2.9	0.1	0.3	0.0	0.0	0.4
1-Ton Truck, 4×4	300	Gas	2		3	4		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	4	0.3	0.1	0.3	0.1	0.0	0.2
Manlift/Bucket Truck	250	Diesel	1		3	6	0.33 Mile	0.3099	0.0713	0.7059	0.0319	0.0293	97.9342	0.0065		6	1.9	0.4	4.2	0.2	0.2	0.9

Boom/Crane Truck	350	Diesel	1	3	6	0.3669	0.1175	1.0644	0.0378	0.0348	139.2000	0.0106	6	2.2	0.7	6.4	0.2	0.2	1.3
Wire Truck/Trailer	350	Diesel	2	3	6	0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146	6	5.7	1.9	15.6	0.5	0.5	3.8
Puller	350	Diesel	1	3	6	0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100	6	1.8	0.7	6.5	0.2	0.2	1.2
Static Truck/ Tensioner	350	Diesel	1	3	6	0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146	6	2.8	1.0	7.8	0.3	0.2	1.9
													Total	**17.6**	**4.8**	**41.2**	**1.5**	**1.4**	**9.8**
													Total (tons)	**0.0**	**0.0**	**0.1**	**0.0**	**0.0**	
													Grand Total (lb/day)	448.6	111.5	828.2	31.2	29.4	
													Grand Total (tons)	3.2	0.8	5.0	0.2	0.2	1020.8

Transmission and Subtransmission Construction Equipment and Workforce Estimates

Transmission (Segment 2) Construction Equipment and Workforce Estimates

Work Activity				Activity Production				EMFAC2011 Diesel Emission Factors (gms/mi) or OFFROAD Diesel Emissions Factors (lb/hr)							Average Speed (mph)	Miles per day or Hours per day	Estimated Emissions					
Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs/Day)	Estimated Production Per Day	CO	ROG	NO_x	PM_{10}	$PM_{2.5}$	CO_2	CH_4			CO (lbs/day)	ROG (lbs/day)	NO_x (lbs/day)	PM_{10} (lbs/day)	$PM_{2.5}$ (lbs/day)	CO_2e (MT/yr)
Survey – (1)				**4**	**4**		**5**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	1.4	0.0	0.1	0.0	0.0	0.3
3/4 Ton Pick up Truck, 4×4	200	Gas	2		4	8	1.3 Miles/Day	2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	20	8	2.0	0.1	0.2	0.0	0.0	0.9
																Total	**3.5**	**0.1**	**0.4**	**0.0**	**0.0**	**1.2**
																Total (tons)	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	
Marshaling Yard – (2)				**4**				3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	1.4	0.0	0.1	0.0	0.0	0.0
1-Ton Crew Cab, 4×4	300	Diesel	1		2	4		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	4	0.1	0.0	0.2	0.0	0.0	0.1
R/T Crane (M)	300	Diesel	1		2	5		0.3243	0.1077	0.9866	0.0348	0.0320	125.6000	0.0097		5	1.6	0.5	4.9	0.2	0.2	0.6
R/T Forklift	200	Diesel	1		2	5		0.3311	0.0524	0.3883	0.0214	0.0197	56.1000	0.0047		5	1.7	0.3	1.9	0.1	0.1	0.3
Water Truck	300	Diesel	1		2	10		0.4236	0.1474	1.2027	0.0408	0.0375	188.0000	0.0133		10	4.2	1.5	12.0	0.4	0.4	1.9
Jet A Fuel Truck			1		2	4		0.6148	0.2034	1.6679	0.0579	0.0533	260.0000	0.0183		4	2.5	0.8	6.7	0.2	0.2	1.0
Truck, Semi, Tractor	350	Diesel	1		2	6		0.5063	0.1560	1.3478	0.0449	0.0413	241.2000	0.0141		6	3.0	0.9	8.1	0.3	0.2	1.4
																Total	**14.6**	**4.1**	**34.0**	**1.2**	**1.1**	**5.3**
																Total (tons)	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	
R/W Clearing – (3)				**5**	**16**		**5**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	1.8	0.1	0.2	0.0	0.0	1.4
1-Ton Crew Cab, 4×4	300	Diesel	1		16	10		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	10	0.4	0.1	0.4	0.1	0.1	1.1
Motor Grader	350	Diesel	1		16	7		0.5992	0.1759	1.5242	0.0550	0.0506	229.0000	0.1398		7	4.2	1.2	10.7	0.4	0.4	12.8
Water Truck	350	Diesel	2		16	7	0.4 Miles/Day	0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		7	6.6	2.3	18.2	0.6	0.6	23.4
Backhoe/Front Loader	350	Diesel	1		16	7		0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		7	5.1	1.5	12.8	0.4	0.4	19.3
Track Type Dozer	350	Diesel	1		16	9		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236		9	8.3	2.4	19.8	0.8	0.8	15.5
Lowboy Truck/Trailer	500	Diesel	1		16	5		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236		5	4.6	1.3	11.0	0.5	0.4	8.6
																Total	**31.0**	**8.8**	**72.0**	**2.8**	**2.6**	**82.2**
																Total (tons)	**0.2**	**0.1**	**0.6**	**0.0**	**0.0**	
Roads & Landing Work – (4)				**10**	**16**		**19.8 Miles & 60 Pads**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	3.6	0.1	0.4	0.0	0.0	2.7
1-Ton Crew Cab, 4×4	300	Diesel	4		16	5		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	5	0.7	0.2	0.8	0.1	0.1	2.3
Motor Grader	350	Diesel	2		16	5		0.5992	0.1759	1.5242	0.0550	0.0506	229.0000	0.1398		5	6.0	1.8	15.2	0.6	0.5	18.3
Water Truck	350	Diesel	4		16	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	66.9
Backhoe/Front Loader	350	Diesel	2		16	7	1.3 Miles/Day & 5 Structure Pads/Day	0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		7	10.1	3.1	25.6	0.9	0.8	38.6
Drum Type Compactor	250	Diesel	2		16	5		0.3595	0.1207	1.1333	0.0429	0.0395	122.2913	0.0109		5	3.6	1.2	11.3	0.4	0.4	9.8
Track Type Dozer	350	Diesel	2		16	7		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236		7	13.0	3.7	30.7	1.3	1.2	24.2
Excavator	300	Diesel	2		8	7		0.5102	0.1657	1.3127	0.0023	0.0021	174.0000	0.0115		7	7.1	2.3	18.4	0.0	0.0	9.7
Lowboy Truck/Trailer	500	Diesel	2		8	4		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236		4	7.4	2.1	17.6	0.7	0.7	6.9
																Total	**70.4**	**20.9**	**171.0**	**5.8**	**5.4**	**179.5**
																Total (tons)	**0.3**	**0.1**	**0.7**	**0.0**	**0.0**	
Guard Structure Installation – (5)				**12**	**7**		**66 Structures**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	4.3	0.1	0.4	0.0	0.0	1.4
3/4-Ton Pick-up Truck, 4×4	300	Diesel	4	4	7	8		2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	40	50	1.3	0.0	0.1	0.0	0.0	1.0
1-Ton Crew Cab Flat Bed, 4x4	300	Diesel	2		7	8		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	8	0.6	0.1	0.6	0.1	0.1	0.8
Compressor Trailer	120	Diesel	2		7	7		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		7	4.5	1.1	6.6	0.6	0.5	2.3
Auger Truck	500	Diesel	2		7	5		0.6134	0.2065	1.5945	0.0567	0.0522	272.0000	0.0186		5	6.1	2.1	15.9	0.6	0.5	9.5
Extendable Flat Bed Pole Truck	350	Diesel	2		7	8	12 Structures/Day	0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		8	7.5	2.6	20.8	0.7	0.7	11.7
R/T Crane (M)	500	Diesel	2		7	8		0.4948	0.1468	1.2979	0.0470	0.0432	180.0000	0.0132		8	7.9	2.3	20.8	0.8	0.7	10.1
Water Truck	350	Diesel	1		7	8		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		8	3.8	1.3	10.4	0.4	0.3	5.9
Extendable Flat Bed Pole Truck	350	Diesel	2		7	8		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		8	7.5	2.6	20.8	0.7	0.7	11.7
																Total	**43.6**	**12.3**	**96.5**	**3.8**	**3.5**	**54.4**
																Total (tons)	**0.2**	**0.0**	**0.5**	**0.0**	**0.0**	
Remove Existing Conductor & OHGW – (6)				**56**	**61**		**100 Circuit Miles**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	20.3	0.6	2.1	0.0	0.0	58.0
1-Ton Crew Cab, 4×4	300	Diesel	16		61	10		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	10	5.6	1.2	6.0	1.0	1.0	70.1
Man-lift / Bucket Truck	350	Diesel	12		61	10		0.3637	0.0870	0.9773	0.0354	0.1358	143.9610	0.0079		10	43.6	10.4	117.3	4.3	16.3	526.9
Sleeving Truck	300	Diesel	4		61	5		0.4236	0.1474	1.2027	0.0408	0.0375	188.0000	0.0133		5	8.5	2.9	24.1	0.8	0.8	114.7
R/T Crane (M)	300	Diesel	4	4	61	5		0.3243	0.1077	0.9866	0.0348	0.0320	125.6000	0.0097		5	6.5	2.2	19.7	0.7	0.6	76.6
Flat Bed Trailer	N/A	N/A	12		55	3	1.7 Miles/Day	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		3	0.0	0.0	0.0	0.0	0.0	0.0
Truck, Semi, Tractor	350	Diesel	4		55	3		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		3	5.7	1.9	15.6	0.5	0.5	69.0
Bull Wheel Puller	500	Diesel	4		41	5		0.6064	0.2032	1.8639	0.0630	0.0580	265.0000	0.0183		5	12.1	4.1	37.3	1.3	1.2	108.7
Water Truck	350	Diesel	4		41	6		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		6	11.3	3.9	31.2	1.1	1.0	102.8
Hydraulic Rewind Puller	300	Diesel	4		41	5		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		5	6.2	2.2	21.8	0.7	0.6	55.8
																Total	**110.7**	**20.5**	**275.1**	**10.4**	**21.0**	**1182.5**
																Total (tons)	**2.5**	**0.6**	**5.6**	**0.2**	**0.4**	
Remove Existing Lattice Steel Towers – (7)				**12**	**22**		**55 Towers**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	11.6	0.3	1.2	0.0	0.0	12.0
1-Ton Crew Cab, 4×4	300	Diesel	8		22	8		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	8	2.3	0.5	2.4	0.4	0.4	10.1

R/T Crane (M)	215	Diesel	8		22	5		0.3745	0.0978	0.8256	0.0361	0.0332	97.2000	0.0088		5	15.0	3.9	33.0	1.4	1.3	42.8
Compressor Trailer	120	Diesel	8		22	10	2.5 Towers/Day	0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		10	25.7	6.1	37.5	3.3	3.1	41.3
Flat Bed Truck/Trailer	350	Diesel	4		22	8		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		8	15.1	5.2	41.6	1.4	1.3	73.6
Water Truck	350	Diesel	4		22	6		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		6	11.3	3.9	31.2	1.1	1.0	55.2
															Total		**80.9**	**19.1**	**146.9**	**7.7**	**7.1**	**234.9**
															Total (tons)		**0.9**	**0.2**	**1.6**	**0.1**	**0.1**	
Remove Existing Foundations -- (8)				**16**	**22**		**56**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	5.8	0.2	0.6	0.0	0.0	6.0
1-Ton Crew Cab Flat Bed, 4x4	300	Diesel	4		22	10		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	10	1.4	0.3	1.5	0.3	0.2	6.3
Dump Truck	350	Diesel	4		22	10	2.5 Towers/Day	0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.9	1.6	92.0
Backhoe/Front Loader	350	Diesel	4		22	10		0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		10	29.0	8.7	73.0	2.5	2.3	151.8
Water Truck	350	Diesel	4		22	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	92.0
															Total		**73.8**	**22.2**	**179.2**	**6.4**	**5.8**	**348.0**
															Total (tons)		**0.8**	**0.2**	**2.0**	**0.1**	**0.1**	
Remove Existing Tubular Steel Poles -- (9)				**24**	**2**		**1 TSP**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	8.7	0.2	0.9	0.0	0.0	0.8
3/4-Ton Pick-up Truck, 4x4	300	Diesel	8		2	8		2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090		8	182.8	6.6	20.1	0.3	0.3	41.5
R/T Crane (M)	300	Diesel	4		2	5	3.8 Steel Poles/Day	0.3243	0.1077	0.9866	0.0348	0.0320	125.6000	0.0097		5	6.5	2.2	19.7	0.7	0.6	2.5
Compressor Trailer	120	Diesel	4		2	10		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		10	12.9	3.0	18.7	1.7	1.5	1.9
Water Truck	350	Diesel	4		2	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	8.4
															Total		**229.7**	**18.5**	**111.5**	**4.4**	**4.1**	**55.1**
															Total (tons)		**0.2**	**0.0**	**0.1**	**0.0**	**0.0**	
Install LST Foundations -- (10)				**29**	**18**		**59 LST's**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	10.1	0.3	1.0	0.0	0.0	8.6
1-Ton Crew Cab Flat Bed, 4x4	300	Diesel	8		18	5		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	5	1.4	0.3	1.5	0.3	0.2	5.2
R/T Crane (M)	300	Diesel	4		18	7		0.3243	0.1077	0.9866	0.0348	0.0320	125.6000	0.0097		7	9.1	3.0	27.6	1.0	0.9	31.7
Backhoe/Front Loader	200	Diesel	4		18	10		0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		10	29.0	8.7	73.0	2.5	2.3	124.2
Auger Truck	500	Diesel	4		18	10	3.2 LSTs/Day	0.6134	0.2065	1.5945	0.0567	0.0522	272.0000	0.0186		10	24.5	8.3	63.8	2.3	2.1	97.9
10-cu. yd. Dump Truck	350	Diesel	8		18	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	37.7	13.0	104.1	3.6	3.3	150.5
Kaman K-MAX		Jet A	1		18	7		1.3537	1.1287	7.4027	0.2005	0.1845	1930.3207	0.0000		7	9.5	7.9	51.8	1.4	1.3	121.6
4000 gallon Water Truck	350	Diesel	4		18	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	75.2
10-cu. yd. Concrete Mixer Truck	425	Diesel	12		18	7		0.5422	0.1843	1.4476	0.0507	0.0467	240.5000	0.0166		7	45.5	15.5	121.6	4.3	3.9	181.8
															Total		**185.7**	**63.5**	**496.5**	**17.1**	**15.7**	**796.6**
															Total (tons)		**1.7**	**0.6**	**4.5**	**0.2**	**0.1**	
LST Steel Haul -- (11)				**9**	**24**		**59 LST's**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	2.9	0.1	0.3	0.0	0.0	3.3
1-Ton Crew Cab Flat Bed, 4x4	300	Diesel	4		24	10		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	10	1.4	0.3	1.5	0.3	0.2	6.9
Truck/Trailer	400	Diesel	4		24	10		0.5185	0.1769	1.3986	0.0487	0.0448	230.0000	0.0160		10	20.7	7.1	55.9	1.9	1.8	110.4
Bell 212		Jet A	2		14	7	2.5 LSTs/Day	1.2590	1.0558	9.3516	0.2472	0.2275	2198.7342	0.0000		7	17.6	14.8	130.9	3.5	3.2	215.5
4000 gallon Water Truck	350	Diesel	4		24	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	100.3
R/T Forklift	200	Diesel	2		24	6		0.3311	0.0524	0.3883	0.0214	0.0197	56.1000	0.0047		6	4.0	0.6	4.7	0.3	0.2	8.1
															Total		**65.5**	**29.4**	**245.4**	**7.7**	**7.1**	**444.4**
															Total (tons)		**0.8**	**0.4**	**2.9**	**0.1**	**0.1**	
LST Steel Assembly -- (12)				**40**	**44**		**59 LST's**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	14.5	0.4	1.5	0.0	0.0	29.9
3/4-Ton Pick-up Truck, 4x4	300	Diesel	4		44	5		2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	20	5	2.5	0.1	0.3	0.0	0.0	12.6
1-Ton Crew Cab Flat Bed, 4x4	300	Diesel	6		44	5		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	5	1.1	0.2	1.1	0.2	0.2	9.5
R/T Forklift	125	Diesel	4		44	7	1.4 LSTs/Day	0.2158	0.0390	0.2571	0.0206	0.0190	31.2000	0.0035		7	6.0	1.1	7.2	0.6	0.5	19.2
R/T Crane (L)	300	Diesel	4		44	10		0.3243	0.1077	0.9866	0.0348	0.0320	125.6000	0.0097		10	13.0	4.3	39.5	1.4	1.3	110.5
Kaman K-MAX		Jet A	1		44	7		1.3532	1.1287	7.4027	0.2005	0.1845	1930.3207	0.0000		7	9.5	7.9	51.8	1.4	1.3	297.3
Compressor Trailer	120	Diesel	4		44	6		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		6	7.7	1.8	11.2	1.0	0.9	24.8
															Total		**54.2**	**15.8**	**112.6**	**4.6**	**4.2**	**503.8**
															Total (tons)		**1.2**	**0.3**	**2.5**	**0.1**	**0.1**	
LST Erection -- (13)				**48**	**31**		**59 LST's**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	17.4	0.5	1.8	0.0	0.0	25.3
3/4-Ton Pick-up Truck, 4x4	300	Diesel	8		31	8		2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	20	8	8.1	0.3	0.9	0.0	0.0	28.4
1-Ton Crew Cab Flat Bed, 4x4	300	Diesel	8		31	8		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	8	2.3	0.5	2.4	0.4	0.4	14.2
4000 gallon Water Truck	350	Diesel	4		31	10	2 LSTs/Day	0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	129.6
R/T Crane (M)	215	Diesel	4		31	7		0.3745	0.0978	0.8256	0.0361	0.0332	97.2000	0.0088		7	10.5	2.7	23.1	1.0	0.9	42.2
R/T Crane (L)	350	Diesel	4		31	7		0.3669	0.1175	1.0644	0.0378	0.0348	139.2000	0.0106		7	10.3	3.3	29.8	1.1	1.0	60.4
															Total		**67.3**	**13.8**	**110.0**	**4.3**	**4.0**	**300.1**
															Total (tons)		**1.0**	**0.2**	**1.7**	**0.1**	**0.1**	
Install Tubular Steel Pole Foundations -- (14)				**24**	**1**		**1 TSP's**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	8.7	0.2	0.9	0.0	0.0	0.4
1-Ton Crew Cab Flat Bed, 4x4	300	Diesel	12		1	5		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	5	2.1	0.5	2.3	0.4	0.4	0.4
R/T Crane (M)	300	Diesel	4		1	7		0.3243	0.1077	0.9866	0.0348	0.0320	125.6000	0.0097		7	9.1	3.0	27.6	1.0	0.9	1.9
Backhoe/Front Loader	200	Diesel	4		1	10		0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		10	29.0	8.7	73.0	2.5	2.3	6.9
Auger Truck	500	Diesel	4		1	10	2.5 TSPs/Day	0.6134	0.2065	1.5945	0.0567	0.0522	272.0000	0.0186		10	24.5	8.3	63.8	2.3	2.1	5.4
4000 gallon Water Truck	350	Diesel	4		1	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	4.2
10-cu. yd. Dump Truck	350	Diesel	8		1	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	37.7	13.0	104.1	3.6	3.3	8.4
10-cu. yd. Concrete Mixer Truck	425	Diesel	12		1	6		0.6064	0.2032	1.8639	0.0630	0.0580	265.0000	0.0183		6	43.7	14.6	134.2	4.5	4.2	9.5
															Total		**173.6**	**54.8**	**457.9**	**16.1**	**14.8**	**37.0**
															Total (tons)		**0.1**	**0.0**	**0.2**	**0.0**	**0.0**	
Steel Pole Haul -- (15)				**9**	**1**		**1 TSP's**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	2.9	0.1	0.3	0.0	0.0	0.1
3/4-Ton Pick-up Truck, 4x4	300	Diesel	4		1	8		2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	20	8	4.0	0.1	0.4	0.0	0.0	0.5
4000 gallon Water Truck	350	Diesel	4		1	10	10 Steel Poles/Day	0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	4.2
R/T Crane (L)	350	Diesel	2		1	10		0.3669	0.1175	1.0644	0.0378	0.0348	139.2000	0.0106		10	7.3	2.3	21.3	0.8	0.7	1.4
40' Flat Bed Truck/Trailer	350	Diesel	4		1	8		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		8	15.1	5.2	41.6	1.4	1.3	3.3
															Total		**48.2**	**14.3**	**115.7**	**4.0**	**3.7**	**9.5**
															Total (tons)		**0.0**	**0.0**	**0.1**	**0.0**	**0.0**	

Steel Pole Assembly -- (16)				**24**	**1**		**1 TSP's**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	8.7	0.2	0.9	0.0	0.0	0.4
3/4-Ton Pick-up Truck, 4×4	300	Diesel	8		1	8		2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090		8	182.8	6.6	20.1	0.3	0.3	20.7
4000 gallon Water Truck	350	Diesel	4		1	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	4.2
1-Ton Crew Cab Flat Bed, 4×4	300	Diesel	8		1	6	5 Steel Poles/Day	0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	6	1.7	0.4	1.8	0.3	0.3	0.3
Compressor Trailer	120	Diesel	4		1	6		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		6	7.7	1.8	11.2	1.0	0.9	0.6
R/T Crane (L)	350	Diesel	4		1	6		0.3669	0.1175	1.0644	0.0378	0.0348	139.2000	0.0106		6	8.8	2.8	25.5	0.9	0.8	1.7
															Total		**228.6**	**18.4**	**111.6**	**4.2**	**3.9**	**27.9**
															Total (tons)		**0.1**	**0.0**	**0.1**	**0.0**	**0.0**	
Steel Pole Erection -- (17)				**24**	**1**		**1 TSP's**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	8.7	0.2	0.9	0.0	0.0	0.4
3/4-Ton Pick-up Truck, 4×4	300	Diesel	8		1	5		2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090		5	114.3	4.1	12.6	0.2	0.2	13.0
1-Ton Crew Cab Flat Bed, 4×4	300	Diesel	8		1	5		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	5	1.4	0.3	1.5	0.3	0.2	0.3
4000 gallon Water Truck	350	Diesel	4		1	10	5 Steel Poles/Day	0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	4.2
Compressor Trailer	120	Diesel	4		1	5		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		5	6.4	1.5	9.4	0.8	0.8	0.5
R/T Crane (L)	350	Diesel	4		1	6		0.3669	0.1175	1.0644	0.0378	0.0348	139.2000	0.0106		6	8.8	2.8	25.5	0.9	0.8	1.7
															Total		**158.4**	**15.5**	**101.9**	**4.0**	**3.7**	**20.0**
															Total (tons)		**0.1**	**0.0**	**0.1**	**0.0**	**0.0**	
H-Frame Installation -- (18)				**12**	**5**		**1 Structures**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	4.3	0.1	0.4	0.0	0.0	1.0
3/4-Ton Pick-up Truck, 4×4	300	Diesel	4		5	8		2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	20	8	4.0	0.1	0.4	0.0	0.0	2.3
1 Ton Crew Cab Flat Bed, 4×4	300	Diesel	2		5	8		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	8	0.6	0.1	0.6	0.1	0.1	0.6
Compressor Trailer	120	Diesel	2		5	7		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		7	4.5	1.1	6.6	0.6	0.5	1.6
Auger Truck	500	Diesel	2		5	5		0.6134	0.2065	1.5945	0.0567	0.0522	272.0000	0.0186		5	6.1	7.1	15.9	0.6	0.5	6.8
Extendable Flat Bed Pole Truck	350	Diesel	2		5	8		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		8	7.5	2.6	20.8	0.7	0.7	8.4
R/T Crane (M)	500	Diesel	2		5	8		0.4948	0.1468	1.2979	0.0470	0.0432	180.0000	0.0132		8	7.9	2.3	20.8	0.8	0.7	7.2
Water Truck	350	Diesel	1		5	8		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		8	3.8	1.3	10.4	0.4	0.3	4.2
Extendable Flat Bed Pole Truck	350	Diesel	2		5	8		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		8	7.5	2.6	20.8	0.7	0.7	8.4
															Total		46.3	12.4	96.8	3.8	3.5	40.4
															Total (tons)		**0.1**	**0.0**	**0.2**	**0.0**	**0.0**	
Install Conductor -- (10)				**220**	**12**		**18.7 Circuit Miles**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	79.6	2.2	8.1	0.1	0.1	44.8
3/4-Ton Pick-up Truck, 4×4	300	Diesel	4	4	12	10		2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	40	50	3.8	0.1	0.4	0.0	0.0	1.7
1-Ton Crew Cab Flat Bed, 4×4	300	Diesel	8		12	10		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	10	2.8	0.6	3.0	0.5	0.5	6.9
Wire Truck/Trailer	350	Diesel	4		8	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	33.4
R/T Crane (M)	215	Diesel	4		12	10		0.3745	0.0978	0.8256	0.0361	0.0332	97.2000	0.0088		10	15.0	3.9	33.0	1.4	1.3	23.3
Dump Truck	350	Diesel	2		12	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	9.4	3.2	26.0	0.9	0.8	25.1
Bucket Truck	350	Diesel	4		12	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	50.2
22-Ton Manitex	350	Diesel	4		12	10		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		10	12.3	4.4	43.6	1.4	1.3	32.6
Splicing Rig	350	Diesel	2		3	5		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		5	3.1	1.1	10.9	0.3	0.3	2.0
Splicing Lab	300	Diesel	2		3	5	1.6 Miles/Day	0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		5	3.1	1.1	10.9	0.3	0.3	2.0
Sock Line Puller	300	Diesel	2		3	6		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		6	3.7	1.3	13.1	0.4	0.4	2.4
Bull Wheel Puller	350	Diesel	2		7	10		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		10	6.2	2.2	21.8	0.7	0.6	0.5
Backhoe/Front Loader	125	Diesel	2		7	8		0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		8	11.6	3.5	29.2	1.0	0.9	19.3
D8 Cat	350	Diesel	1		7	8		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		8	2.5	0.9	8.7	0.3	0.3	3.8
Hughes 500 E Helicopter		Jet A	2		7	7		2.1989	1.7655	1.4214	0.0445	0.0409	763.4927	0.0000		7	30.8	24.7	19.9	0.6	0.6	37.4
Fuel, Helicopter Support Truck	300	Diesel	2		7	7		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		7	4.3	1.6	15.3	0.5	0.4	6.7
Sag Cat w/ 2 winches	350	Diesel	1		3	10		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		10	3.1	1.1	10.9	0.3	0.3	2.0
Static Truck/ Tensioner	350	Diesel	2		7	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	9.4	3.2	26.0	0.9	0.8	14.6
															Total		**238.2**	**68.4**	**384.9**	**13.4**	**12.3**	**316.0**
															Total (tons)		**0.8**	**0.2**	**1.3**	**0.0**	**0.0**	
Guard Structure Removal -- (20)				**12**	**5**		**86 Structures**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	4.3	0.1	0.4	0.0	0.0	1.0
3/4-Ton Pick-up Truck, 4×4	300	Diesel	4		5	7		2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	40	50	1.6	0.1	0.2	0.0	0.0	0.0
1-Ton Crew Cab Flat Bed, 4×4	300	Diesel	4		5	7		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	7	1.0	0.2	1.1	0.2	0.2	1.0
Compressor Trailer	120	Diesel	4		5	7		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		7	9.0	2.1	13.1	1.2	1.1	3.3
Extendable Flat Bed Pole Truck	350	Diesel	4		5	6		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		6	11.3	3.9	31.2	1.1	1.0	12.5
Water Truck	300	Diesel	2		5	10	17.2 Structures/Day	0.4236	0.1474	1.2027	0.0408	0.0375	188.0000	0.0133		10	8.5	2.9	24.1	0.8	0.8	9.4
R/T Crane (M)	500	Diesel	2		5	8		0.4948	0.1468	1.2979	0.0470	0.0432	180.0000	0.0132		8	7.9	2.3	20.8	0.8	0.7	7.2
80ft. Hydraulic Man lift / Bucket Truck	350	Diesel	2		5	4		0.3637	0.0870	0.9773	0.0354	0.1358	143.9610	0.0079		4	2.9	0.7	7.8	0.3	1.1	2.9
															Total		46.5	**12.4**	**98.6**	**4.3**	**4.3**	**37.3**
															Total (tons)		**0.1**	**0.0**	**0.2**	**0.0**	**0.0**	
Restoration -- (21)				**14**	**2**		**5 Miles**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	5.1	0.1	0.5	0.0	0.0	0.5
1-Ton Crew Cab, 4×4	300	Diesel	4		2	2		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	2	0.3	0.1	0.3	0.1	0.0	0.1
Motor Grader	350	Diesel	2		2	6		0.5992	0.1759	1.5242	0.0550	0.0506	229.0000	0.1398		6	7.2	2.1	18.3	0.7	0.6	2.7
Water Truck	350	Diesel	2		2	8		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		8	7.5	2.6	20.8	0.7	0.7	3.3
Backhoe/Front Loader	350	Diesel	2		2	6	2.5 Miles/Day	0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		6	8.7	2.6	21.9	0.8	0.7	4.1
Drum Type Compactor	250	Diesel	2		2	6		0.3595	0.1207	1.1333	0.0429	0.0395	122.2913	0.0109		6	4.3	1.4	13.6	0.5	0.5	1.5
Track Type Dozer	350	Diesel	2		2	6		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236		6	11.1	3.1	26.3	1.1	1.0	2.6
Lowboy Truck/Trailer	300	Diesel	2		2	3		0.4236	0.1474	1.2027	0.0408	0.0375	188.0000	0.0133		3	2.5	0.9	7.2	0.2	0.2	1.1
															Total		**46.7**	**13.0**	**109.0**	**4.0**	**3.7**	**16.0**
															Total (tons)		**0.0**	**0.0**	**0.1**	**0.0**	**0.0**	
Retaining walls -- (22)				**100**	**33**		**7 Walls**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	36.2	1.0	3.7	0.0	0.0	56.1
1-Ton Crew Cab, 4×4	300	Diesel	4		33	10		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	10	1.4	0.3	1.5	0.3	0.2	9.5
Motor Grader	250	Diesel	2		33	10		0.5992	0.1759	1.5242	0.0550	0.0506	229.0000	0.1398		10	12.0	3.5	30.5	1.1	1.0	75.6
Water Truck	350	Diesel	2		33	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	9.4	3.2	26.0	0.9	0.8	69.0
Backhoe/Front Loader	125	Diesel	2		33	10		0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		10	14.5	4.4	36.5	1.3	1.2	113.9

Drum Type Compactor	250	Diesel	2	33	10	4.8 days/wall	0.3595	0.1207	1.1333	0.0429	0.0395	122.2913	0.0109	10	7.2	2.4	22.7	0.9	0.8	40.4
Track Type Dozer	350	Diesel	2	33	10		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236	10	18.5	5.2	43.9	1.8	1.7	71.2
Concrete Mixer	350	Diesel	2	33	10		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100	10	6.2	2.2	21.8	0.7	0.6	44.9
Excavator	250	Diesel	2	33	10		0.5102	0.1657	1.3127	0.0023	0.0021	174.0000	0.0115	10	10.2	3.3	26.3	0.0	0.0	57.4
Dump Truck	350	Diesel	2	33	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146	10	9.4	3.2	26.0	0.9	0.8	69.0
Lowboy Truck/Trailer	300	Diesel	2	33	10		0.4236	0.1474	1.2027	0.0408	0.0375	188.0000	0.0133	10	8.5	2.9	24.1	0.8	0.8	62.0
														Total	**133.4**	**31.8**	**282.9**	**8.7**	**8.0**	**668.8**
														Total (tons)	**2.2**	**0.5**	**4.3**	**0.1**	**0.1**	
														Grand Total (lb/day)	2159.9	499.6	3791.9	138.7	140.8	
														Grand Total (tons)	13.4	3.7	29.3	1.1	1.2	5363.0

Transmission and Subtransmission Construction Equipment and Workforce Estimates

Transmission (Segment 3) Construction Equipment and Workforce Estimates

Work Activity				Activity Production				EMFAC2011 Diesel Emission Factors (gms/mi) or OFFROAD Diesel Emissions Factors (lb/hr)							Average Speed (mph)	Miles per day or Hours per day	Estimated Emissions					
								CO	ROG	NO_2	PM_{10}	$PM_{2.5}$	CO_2	CH_4			CO	ROG	NO_x	PM_{10}	$PM_{2.5}$	CO_2e
Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs/Day)	Estimated Production Per Day										(lbs/day)	(lbs/day)	(lbs/day)	(lbs/day)	(lbs/day)	(MT/yr)
Survey – (1)				**4**	**8**		**10**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	1.4	0.0	0.1	0.0	0.0	0.5
3/4 Ton Pick up Truck, 4×4	200	Gas	2		8	8	1.3 Miles/Day	2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	20	8	2.0	0.1	0.2	0.0	0.0	1.8
																Total	**3.5**	**0.1**	**0.4**	**0.0**	**0.0**	**2.4**
																Total (tons)	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	
Marshaling Yard – (2)				**4**				3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	1.4	0.0	0.1	0.0	0.0	0.0
1-Ton Crew Cab, 4×4	300	Diesel	1		2	4		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	4	0.1	0.0	0.2	0.0	0.0	0.1
R/T Crane (M)	300	Diesel	1		2	5		0.3243	0.1077	0.9866	0.0348	0.0320	125.6000	0.0097		5	1.6	0.5	4.9	0.2	0.2	0.6
R/T Forklift	200	Diesel	1		2	5		0.3311	0.0524	0.3883	0.0214	0.0197	56.1000	0.0047		5	1.7	0.3	1.9	0.1	0.1	0.3
Water Truck	300	Diesel	1		2	10		0.4236	0.1474	1.2027	0.0408	0.0375	188.0000	0.0133		10	4.2	1.5	12.0	0.4	0.4	1.9
Jet A Fuel Truck			1		2	4		0.6148	0.2034	1.6679	0.0579	0.0533	260.0000	0.0183		4	2.5	0.8	6.7	0.2	0.2	1.0
Truck, Semi, Tractor	350	Diesel	1		2	6		0.5063	0.1560	1.3478	0.0449	0.0413	241.2000	0.0141		6	3.0	0.9	8.1	0.3	0.2	1.4
																Total	**14.6**	**4.1**	**34.0**	**1.2**	**1.1**	**5.3**
																Total (tons)	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	
R/W Clearing – (3)				**5**	**32**		**10 Miles**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	1.8	0.1	0.2	0.0	0.0	2.7
1-Ton Crew Cab, 4×4	300	Diesel	1		32	10	0.4 Miles/Day	0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	10	0.4	0.1	0.4	0.1	0.1	2.3
Motor Grader	350	Diesel	1		32	7		0.5992	0.1759	1.5242	0.0550	0.0506	229.0000	0.1398		7	4.2	1.2	10.7	0.4	0.4	25.6
Water Truck	350	Diesel	2		32	7		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		7	6.6	2.3	18.2	0.6	0.6	46.8
Backhoe/Front Loader	350	Diesel	1		32	7		0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		7	5.1	1.5	12.8	0.4	0.4	38.6
Track Type Dozer	350	Diesel	1		32	9		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236		9	8.3	2.4	19.8	0.8	0.8	31.1
Lowboy Truck/Trailer	500	Diesel	1		32	5		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236		5	4.6	1.3	11.0	0.5	0.4	17.3
																Total	**31.0**	**8.8**	**72.9**	**2.8**	**2.6**	**164.5**
																Total (tons)	**0.5**	**0.1**	**1.2**	**0.0**	**0.0**	
Roads & Landing Work – (4)				**10**	**32**		**30.6 Miles & 321 Pads**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	3.6	0.1	0.4	0.0	0.0	5.4
1-Ton Crew Cab, 4×4	300	Diesel	4		32	5	1.3 Miles/Day & 5 Structure Pads/Day	0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	5	0.7	0.2	0.8	0.1	0.1	4.6
Motor Grader	350	Diesel	2		32	5		0.5992	0.1759	1.5242	0.0550	0.0506	229.0000	0.1398		5	6.0	1.8	15.2	0.6	0.5	36.6
Water Truck	350	Diesel	4		32	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	133.8
Backhoe/Front Loader	350	Diesel	2		32	7		0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		7	10.1	3.1	25.6	0.9	0.8	77.3
Drum Type Compactor	250	Diesel	2		32	5		0.3595	0.1207	1.1333	0.0429	0.0395	122.2913	0.0109		5	3.6	1.2	11.3	0.4	0.4	19.6
Track Type Dozer	350	Diesel	2		32	7		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236		7	13.0	3.7	30.7	1.3	1.2	48.3
Excavator	300	Diesel	2		16	7		0.5102	0.1657	1.3127	0.0023	0.0021	174.0000	0.0115		7	7.1	2.3	18.4	0.0	0.0	19.5
Lowboy Truck/Trailer	500	Diesel	2		16	4		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236		4	7.4	2.1	17.6	0.7	0.7	13.8
																Total	**70.4**	**20.9**	**171.9**	**5.8**	**5.4**	**358.0**
																Total (tons)	**0.6**	**0.2**	**1.4**	**0.0**	**0.0**	
Guard Structure Installation – (5)				**12**	**15**		**172 Structures**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	4.3	0.1	0.4	0.0	0.0	3.1
3/4-Ton Pick-up Truck, 4×4	300	Diesel	4	4	15	8	12 Structures/Day	2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	40	50	1.3	0.0	0.1	0.0	0.0	2.1
1-Ton Crew Cab Flat Bed, 4x4	300	Diesel	2		15	8		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	8	0.6	0.1	0.6	0.1	0.1	1.7
Compressor Trailer	120	Diesel	2		15	7		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		7	4.5	1.1	6.6	0.6	0.5	4.9
Auger Truck	500	Diesel	2		15	5		0.6134	0.2065	1.5945	0.0567	0.0522	272.0000	0.0186		5	6.1	2.1	15.9	0.6	0.5	20.4
Extendable Flat Bed Pole Truck	350	Diesel	2		15	8		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		8	7.5	2.6	20.8	0.7	0.7	25.1
R/T Crane (M)	500	Diesel	2		15	8		0.4948	0.1468	1.2979	0.0470	0.0432	180.0000	0.0132		8	7.9	2.3	20.8	0.8	0.7	21.6
Water Truck	350	Diesel	1		15	8		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		8	3.8	1.3	10.4	0.4	0.3	12.5
Extendable Flat Bed Pole Truck	350	Diesel	2		15	8		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		8	7.5	2.6	20.8	0.7	0.7	25.1
																Total	**43.0**	**12.3**	**96.5**	**3.8**	**3.5**	**110.6**
																Total (tons)	**0.3**	**0.1**	**0.7**	**0.0**	**0.0**	
Remove Existing Conductor & OHGW – (6)				**56**	**122**		**200 Circuit Miles**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	20.3	0.6	2.1	0.0	0.0	116.1
1-Ton Crew Cab, 4×4	300	Diesel	16		122	10	1.7 Miles/Day	0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	10	5.6	1.2	6.0	1.0	1.0	140.1
Man-lift / Bucket Truck	350	Diesel	12		122	10		0.3637	0.0870	0.9773	0.0354	0.1358	143.9610	0.0079		10	43.6	10.4	117.3	4.3	16.3	1053.8
Sleeving Truck	300	Diesel	4		122	5		0.4236	0.1474	1.2027	0.0408	0.0375	188.0000	0.0133		5	8.5	2.9	24.1	0.8	0.8	229.4
R/T Crane (M)	300	Diesel	4	4	122	5		0.3243	0.1077	0.9866	0.0348	0.0320	125.6000	0.0097		5	6.5	2.2	19.7	0.7	0.6	153.2
Flat Bed Trailer	N/A	N/A	12		110	3		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		3	0.0	0.0	0.0	0.0	0.0	0.0
Truck, Semi, Tractor	350	Diesel	4		110	3		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		3	5.7	1.9	15.6	0.5	0.5	137.9
Bull Wheel Puller	500	Diesel	4		83	5		0.6064	0.2032	1.8639	0.0630	0.0580	265.0000	0.0183		5	12.1	4.1	37.3	1.3	1.2	220.0
Water Truck	350	Diesel	4		83	6		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		6	11.3	3.9	31.2	1.1	1.0	208.2
Hydraulic Rewind Puller	300	Diesel	4		83	5		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		5	6.2	2.2	21.8	0.7	0.6	112.9
																Total	**110.7**	**29.5**	**275.1**	**10.4**	**21.9**	**2371.5**
																Total (tons)	**5.0**	**1.2**	**11.4**	**0.4**	**0.9**	
Remove Existing Lattice Steel Towers – (7)				**12**	**45**		**111 Towers**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	11.6	0.3	1.2	0.0	0.0	24.5
1-Ton Crew Cab, 4×4	300	Diesel	8		45	8		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	8	2.3	0.5	2.4	0.4	0.4	20.7

A/T Crane (M)	215	Diesel	8		45	5	2.5 Towers/Day	0.3745	0.0978	0.8256	0.0361	0.0332	97.7000	0.0088		5	15.0	3.9	33.0	1.4	1.3	87.5
Compressor Trailer	120	Diesel	8		45	10		0.3216	0.0758	0.4687	0.0416	0.0383	46.9502	0.0068		10	25.7	6.1	37.5	3.3	3.1	84.5
Flat Bed Truck/Trailer	350	Diesel	4		45	8		0.4710	0.1627	1.3007	0.0448	0.0412	209.0000	0.0146		8	15.1	5.2	41.6	1.4	1.3	150.5
Water Truck	350	Diesel	4		45	6		0.4710	0.1627	1.3007	0.0448	0.0412	209.0000	0.0146		6	11.3	3.9	31.2	1.1	1.0	112.9
															Total		**80.9**	**19.9**	**140.9**	**7.7**	**7.1**	**480.5**
															Total (tons)		**1.8**	**0.4**	**3.3**	**0.2**	**0.2**	
Remove Existing Foundations -- (8)				**16**	**45**		**111 Towers**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	5.8	0.2	0.6	0.0	0.0	12.2
1-Ton Crew Cab Flat Bed, 4x4	300	Diesel	4		45	10	2.5 Towers/Day	0.7994	0.1746	0.8563	0.1476	0.1358	375.6138	0.0649	70	10	1.4	0.3	1.5	0.3	0.2	12.9
Dump Truck	350	Diesel	4		45	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	188.1
Backhoe/Front Loader	350	Diesel	4		45	10		0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		10	20.0	8.7	73.0	2.5	2.3	310.5
Water Truck	350	Diesel	8		45	10		0.4710	0.1627	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	188.1
															Total		**73.9**	**22.2**	**179.2**	**6.4**	**5.8**	**711.9**
															Total (tons)		**1.7**	**0.5**	**4.0**	**0.1**	**0.1**	
Remove Existing Tubular Steel Poles -- (9)				**24**	**2**		**5 TSP**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2709	0.0518	40	50	8.7	0.2	0.9	0.0	0.0	0.8
3/4-Ton Pick-up Truck, 4x4	300	Diesel	8		2	8	3.8 Steel Poles/Day	2.8566	0.1034	0.3141	0.0043	0.0039	648.3768	0.1090		8	182.8	6.6	20.1	0.3	0.3	41.5
A/T Crane (M)	300	Diesel	4		2	5		0.3243	0.1077	0.9866	0.0348	0.0370	125.6000	0.0097		5	6.5	2.2	19.7	0.7	0.6	2.5
Compressor Trailer	120	Diesel	4		2	10		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		10	12.9	3.0	18.7	1.7	1.5	1.9
Water Truck	350	Diesel	4		2	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	8.4
															Total		**228.7**	**18.5**	**111.5**	**4.4**	**4.1**	**55.1**
															Total (tons)		**0.2**	**0.0**	**0.1**	**0.0**	**0.0**	
Install LST Foundations -- (10)				**28**	**37**		**118 LST's**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	10.1	0.3	1.0	0.0	0.0	17.6
1-Ton Crew Cab Flat Bed, 4x4	300	Diesel	8		37	5	3.2 LSTs/Day	0.7994	0.1746	0.8563	0.1476	0.1358	375.6138	0.0649	20	5	1.4	0.3	1.5	0.3	0.2	10.6
A/T Crane (M)	300	Diesel	4		37	7		0.3243	0.1077	0.9866	0.0348	0.0320	125.6000	0.0097		7	9.1	3.0	27.6	1.0	0.9	65.1
Backhoe/Front Loader	200	Diesel	4		37	10		0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		10	29.0	8.7	73.0	2.5	2.3	755.3
Auger Truck	500	Diesel	4		37	10		0.6134	0.2065	1.5945	0.0567	0.0522	272.0000	0.0186		10	24.5	8.3	63.8	2.3	2.1	201.3
10-cu. yd. Dump Truck	350	Diesel	8		37	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	37.7	13.0	104.1	3.6	3.3	309.3
Kaman K-MAX		Jet A	1		37	7		1.3532	1.1287	7.4027	0.2005	0.1845	1930.3207	0.0000		7	9.5	7.9	51.8	1.4	1.3	250.0
4000 gallon Water Truck	350	Diesel	4		37	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	57.0	1.8	1.6	154.7
10-cu. yd. Concrete Mixer Truck	425	Diesel	12		37	7		0.5422	0.1843	1.4476	0.0507	0.0467	240.5000	0.0166		7	45.5	15.5	121.6	4.3	3.9	373.7
															Total		**185.7**	**63.5**	**496.5**	**17.1**	**15.7**	**1637.6**
															Total (tons)		**3.4**	**1.2**	**9.2**	**0.3**	**0.3**	
LST Steel Haul -- (11)				**8**	**47**		**118 LST's**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	2.9	0.1	0.3	0.0	0.0	6.4
1-Ton Crew Cab Flat Bed, 4x4	300	Diesel	4		47	10	2.5 LSTs/Day	0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	10	1.4	0.3	1.5	0.3	0.2	13.5
Truck/Trailer	400	Diesel	4		47	10		0.5185	0.1769	1.3986	0.0487	0.0448	230.0000	0.0160		10	20.7	7.1	55.9	1.9	1.8	716.2
Bell 212		Jet A	2		27	7		1.2590	1.0558	9.3516	0.2472	0.2275	2198.7342	0.0000		7	17.6	14.8	130.9	3.5	3.2	415.6
4000 gallon Water Truck	350	Diesel	4		47	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	196.5
A/T Forklift	200	Diesel	2		47	6		0.3311	0.0524	0.3883	0.0214	0.0197	56.1000	0.0047		6	4.0	0.6	4.7	0.3	0.2	15.8
															Total		**65.5**	**29.4**	**245.4**	**7.7**	**7.1**	**863.8**
															Total (tons)		**1.5**	**0.7**	**5.8**	**0.2**	**0.2**	
LST Steel Assembly -- (12)				**40**	**88**		**118 LST's**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	14.5	0.4	1.5	0.0	0.0	59.8
3/4-Ton Pick-up Truck, 4x4	300	Diesel	4		88	5	1.4 LSTs/Day	2.8566	0.1034	0.3141	0.0043	0.0039	648.3768	0.1090	20	5	2.5	0.1	0.3	0.0	0.0	25.2
1-Ton Crew Cab Flat Bed, 4x4	300	Diesel	6		88	5		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	5	1.1	0.2	1.1	0.2	0.2	19.0
A/T Forklift	125	Diesel	4		88	7		0.2158	0.0390	0.2571	0.0206	0.0190	31.2000	0.0035		7	6.0	1.1	7.2	0.6	0.5	38.4
A/T Crane (L)	300	Diesel	4		88	10		0.3743	0.1077	0.9866	0.0348	0.0320	125.6000	0.0097		10	13.0	4.3	39.5	1.4	1.3	771.1
Kaman K-MAX		Jet A	1		88	7		1.3537	1.1787	7.4077	0.2005	0.1845	1930.3707	0.0000		7	9.5	7.9	51.8	1.4	1.3	594.5
Compressor Trailer	120	Diesel	4		88	6		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		6	7.7	1.8	11.2	1.0	0.9	49.6
															Total		**54.2**	**15.8**	**112.6**	**4.8**	**4.2**	**1007.5**
															Total (tons)		**2.4**	**0.7**	**5.0**	**0.2**	**0.2**	
LST Erection -- (13)				**48**	**62**		**118 LST's**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	17.4	0.5	1.8	0.0	0.0	50.6
3/4-Ton Pick-up Truck, 4x4	300	Diesel	8		62	8	2 LSTs/Day	7.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	70	8	8.1	0.3	0.9	0.0	0.0	56.7
1-Ton Crew Cab Flat Bed, 4x4	300	Diesel	8		62	8		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	8	2.3	0.5	2.4	0.4	0.4	28.5
4000 gallon Water Truck	350	Diesel	4		62	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	259.2
A/T Crane (M)	215	Diesel	4		62	7		0.3745	0.0978	0.8256	0.0361	0.0332	97.2000	0.0088		7	10.5	2.7	23.1	1.0	0.9	84.4
A/T Crane (L)	350	Diesel	4		62	7		0.3669	0.1175	1.0644	0.0378	0.0348	139.2000	0.0106		7	10.3	3.3	29.8	1.1	1.0	120.8
															Total		**87.3**	**13.8**	**110.0**	**4.3**	**4.0**	**800.1**
															Total (tons)		**2.1**	**0.4**	**3.4**	**0.1**	**0.1**	
Install Tubular Steel Pole Foundations -- (14)				**24**	**1**		**1 TSP's**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	8.7	0.2	0.9	0.0	0.0	0.4
1-Ton Crew Cab Flat Bed, 4x4	300	Diesel	12		1	5	2.5 TSPs/Day	0.7994	0.1746	0.8563	0.1476	0.1358	375.6138	0.0649	70	5	2.1	0.5	2.3	0.4	0.4	0.4
A/T Crane (M)	300	Diesel	4		1	7		0.3243	0.1077	0.9866	0.0348	0.0370	125.6000	0.0097		7	9.1	3.0	27.6	1.0	0.9	1.8
Backhoe/Front Loader	200	Diesel	4		1	10		0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		10	29.0	8.7	73.0	2.5	2.3	6.9
Auger Truck	500	Diesel	4		1	10		0.6134	0.7065	1.5945	0.0567	0.0522	272.0000	0.0186		10	24.5	8.3	63.8	2.3	2.1	5.4
4000 gallon Water Truck	350	Diesel	4		1	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	4.2
10-cu. yd. Dump Truck	350	Diesel	8		1	10		0.4710	0.1622	1.3007	0.0448	0.0412	709.0000	0.0146		10	37.7	13.0	104.1	3.6	3.3	8.4
10-cu. yd. Concrete Mixer Truck	475	Diesel	12		1	6		0.6064	0.7032	1.8639	0.0630	0.0580	265.0000	0.0183		6	43.7	14.6	134.2	4.5	4.2	9.5
															Total		**173.8**	**54.8**	**457.8**	**16.1**	**14.8**	**37.0**
															Total (tons)		**0.1**	**0.0**	**0.2**	**0.0**	**0.0**	
Steel Pole Haul -- (15)				**8**	**1**		**1 TSP's**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2709	0.0518	40	50	2.9	0.1	0.3	0.0	0.0	0.1
3/4-Ton Pick-up Truck, 4x4	300	Diesel	4		1	8	10 Steel Poles/Day	7.8566	0.1034	0.3141	0.0043	0.0039	648.3768	0.1090	20	8	4.0	0.1	0.4	0.0	0.0	0.5
4000 gallon Water Truck	350	Diesel	4		1	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	4.2
A/T Crane (L)	350	Diesel	7		1	10		0.3669	0.1175	1.0644	0.0378	0.0348	139.2000	0.0106		10	7.3	2.3	21.3	0.8	0.7	1.4
40' Flat Bed Truck/Trailer	350	Diesel	4		1	8		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		8	15.1	5.2	41.6	1.4	1.3	3.3
															Total		**48.2**	**14.3**	**115.7**	**4.0**	**3.7**	**9.5**
															Total (tons)		**0.0**	**0.0**	**0.1**	**0.0**	**0.0**	

Steel Pole Assembly -- (10)				**24**		**1**		**1 TSP's**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	8.7	0.2	0.9	0.0	0.0	0.4
3/4-Ton Pick-up Truck, 4×4	300	Diesel	8			1	8		2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090		8	182.8	6.6	20.1	0.3	0.3	20.7
4000 gallon Water Truck	350	Diesel	4			1	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	4.2
1-Ton Crew Cab Flat Bed, 4×4	300	Diesel	8			1	6	5 Steel Poles/Day	0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	6	1.7	0.4	1.8	0.3	0.3	0.3
Compressor Trailer	120	Diesel	4			1	6		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		6	7.7	1.8	11.2	1.0	0.9	0.6
R/T Crane (L)	350	Diesel	4			1	6		0.3669	0.1175	1.0644	0.0378	0.0348	139.2000	0.0106		6	8.8	2.8	25.5	0.9	0.8	1.7
																Total		**228.6**	**18.4**	**111.6**	**4.3**	**3.9**	**27.9**
																Total (tons)		**0.1**	**0.0**	**0.1**	**0.0**	**0.0**	
Steel Pole Erection -- (17)				**24**		**1**		**1 TSP's**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	8.7	0.2	0.9	0.0	0.0	0.4
3/4-Ton Pick-up Truck, 4×4	300	Diesel	8			1	5		2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090		5	114.3	4.1	12.6	0.2	0.2	13.0
1-Ton Crew Cab Flat Bed, 4×4	300	Diesel	8			1	5		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	5	1.4	0.3	1.5	0.3	0.2	0.3
4000 gallon Water Truck	350	Diesel	4			1	10	5 Steel Poles/Day	0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	4.2
Compressor Trailer	120	Diesel	4			1	5		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		5	6.4	1.5	9.4	0.8	0.8	0.5
R/T Crane (L)	350	Diesel	4			1	6		0.3669	0.1175	1.0644	0.0378	0.0348	139.2000	0.0106		6	8.8	2.8	25.5	0.9	0.8	1.7
																Total		**158.4**	**15.5**	**101.9**	**4.0**	**3.7**	**20.0**
																Total (tons)		**0.1**	**0.0**	**0.1**	**0.0**	**0.0**	
H-Frame Installation -- (18)				**12**		**5**		**1 Structures**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	4.3	0.1	0.4	0.0	0.0	1.0
3/4 Ton Pick up Truck, 4×4	300	Diesel	4			5	8		2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	20	8	4.0	0.1	0.4	0.0	0.0	2.3
1 Ton Crew Cab Flat Bed, 4×4	300	Diesel	2			5	8		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	8	0.6	0.1	0.6	0.1	0.1	0.6
Compressor Trailer	120	Diesel	2			5	7		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		7	4.5	1.1	6.6	0.6	0.5	1.6
Auger Truck	500	Diesel	2			5	5		0.6134	0.2065	1.5945	0.0567	0.0522	272.0000	0.0186		5	6.1	2.1	15.9	0.6	0.5	6.8
Extendable Flat Bed Pole Truck	350	Diesel	2			5	8		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		8	7.5	2.6	20.8	0.7	0.7	8.4
R/T Crane (M)	500	Diesel	2			5	8		0.4948	0.1468	1.2979	0.0470	0.0432	180.0000	0.0132		8	7.9	2.3	20.8	0.8	0.7	7.2
Water Truck	350	Diesel	1			5	8		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		8	3.8	1.3	10.4	0.4	0.3	4.2
Extendable Flat Bed Pole Truck	350	Diesel	2			5	8		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		8	7.5	2.6	20.8	0.7	0.7	8.4
																Total		46.3	12.4	96.8	3.8	3.5	40.4
																Total (tons)		**0.1**	**0.0**	**0.2**	**0.0**	**0.0**	
Install Conductor -- (10)				**220**		**25**		**37.4 Circuit Miles**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	79.6	2.2	8.1	0.1	0.1	93.4
3/4-Ton Pick-up Truck, 4×4	300	Diesel	4		4	25	10		2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	40	50	7.9	0.3	0.9	0.0	0.0	3.6
1-Ton Crew Cab Flat Bed, 4×4	300	Diesel	8			25	10		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	10	2.8	0.6	3.0	0.5	0.5	14.4
Wire Truck/Trailer	350	Diesel	4			17	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	71.1
R/T Crane (M)	215	Diesel	4			25	10		0.3745	0.0978	0.8256	0.0361	0.0332	97.2000	0.0088		10	15.0	3.9	33.0	1.4	1.3	48.6
Dump Truck	350	Diesel	2			25	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	9.4	3.2	26.0	0.9	0.8	52.3
Bucket Truck	350	Diesel	4			25	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	104.5
22-Ton Manitex	350	Diesel	4			25	10		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		10	12.3	4.4	43.6	1.4	1.3	68.0
Splicing Rig	350	Diesel	2			7	5		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		5	3.1	1.1	10.9	0.3	0.3	4.8
Splicing Lab	300	Diesel	2			7	5	1.6 Miles/Day	0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		5	3.1	1.1	10.9	0.3	0.3	4.8
Sock Line Puller	300	Diesel	2			7	6		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		6	3.7	1.3	13.1	0.4	0.4	5.7
Bull Wheel Puller	350	Diesel	2			13	10		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		10	6.2	2.2	21.8	0.7	0.6	17.7
Backhoe/Front Loader	125	Diesel	2			13	8		0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		8	11.6	3.5	29.2	1.0	0.9	35.9
D8 Cat	350	Diesel	1			13	8		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		8	2.5	0.9	8.7	0.3	0.3	7.1
Hughes 500 E Helicopter		Jet A	2			13	7		2.1989	1.7655	1.4214	0.0445	0.0409	763.4927	0.0000		7	30.8	24.7	19.9	0.6	0.6	69.5
Fuel, Helicopter Support Truck	300	Diesel	2			13	7		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		7	4.3	1.6	15.3	0.5	0.4	12.4
Sag Cat w/ 2 winches	350	Diesel	1			7	10		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		10	3.1	1.1	10.9	0.3	0.3	4.8
Static Truck/ Tensioner	350	Diesel	2			13	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	9.4	3.2	26.0	0.9	0.8	27.2
																Total		**242.3**	**68.5**	**385.3**	**13.4**	**12.3**	**645.4**
																Total (tons)		**1.6**	**0.4**	**2.5**	**0.1**	**0.1**	
Guard Structure Removal -- (20)				**12**		**10**		**172 Structures**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	4.3	0.1	0.4	0.0	0.0	2.0
3/4-Ton Pick-up Truck, 4×4	300	Diesel	4			10	7		2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	40	50	3.1	0.1	0.3	0.0	0.0	0.0
1-Ton Crew Cab Flat Bed, 4×4	300	Diesel	4			10	7		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	7	1.0	0.2	1.1	0.2	0.2	2.0
Compressor Trailer	120	Diesel	4			10	7		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		7	9.0	2.1	13.1	1.2	1.1	6.6
Extendable Flat Bed Pole Truck	350	Diesel	4			10	6		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		6	11.3	3.9	31.2	1.1	1.0	25.1
Water Truck	300	Diesel	2			10	10	17.2 Structures/Day	0.4236	0.1474	1.2027	0.0408	0.0375	188.0000	0.0133		10	8.5	2.9	24.1	0.8	0.8	18.8
R/T Crane (M)	500	Diesel	2			10	8		0.4948	0.1468	1.2979	0.0470	0.0432	180.0000	0.0132		8	7.9	2.3	20.8	0.8	0.7	14.4
80ft. Hydraulic Man-lift / Bucket Truck	350	Diesel	2			10	4		0.3637	0.0870	0.9773	0.0354	0.1358	143.9610	0.0079		4	2.9	0.7	7.8	0.3	1.1	5.8
																Total		**48.1**	**12.5**	**98.8**	**4.3**	**4.8**	74.7
																Total (tons)		**0.2**	**0.1**	**0.5**	**0.0**	**0.0**	
Restoration -- (21)				**14**		**4**		**10 Miles**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	5.1	0.1	0.5	0.0	0.0	1.0
1-Ton Crew Cab, 4×4	300	Diesel	4			4	2		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	2	0.3	0.1	0.3	0.1	0.0	0.2
Motor Grader	350	Diesel	2			4	6		0.5992	0.1759	1.5242	0.0550	0.0506	229.0000	0.1398		6	7.2	2.1	18.3	0.7	0.6	5.5
Water Truck	350	Diesel	2			4	8		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		8	7.5	2.6	20.8	0.7	0.7	6.7
Backhoe/Front Loader	350	Diesel	2			4	6	2.5 Miles/Day	0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		6	8.7	2.6	21.9	0.8	0.7	8.3
Drum Type Compactor	250	Diesel	2			4	6		0.3595	0.1207	1.1333	0.0429	0.0395	122.2913	0.0109		6	4.3	1.4	13.6	0.5	0.5	2.9
Track Type Dozer	350	Diesel	2			4	6		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236		6	11.1	3.1	26.3	1.1	1.0	5.2
Lowboy Truck/Trailer	300	Diesel	2			4	3		0.4236	0.1474	1.2027	0.0408	0.0375	188.0000	0.0133		3	2.5	0.9	7.2	0.2	0.2	2.3
																Total		**46.7**	**13.0**	**109.0**	**4.0**	**3.7**	**32.0**
																Total (tons)		**0.1**	**0.0**	**0.2**	**0.0**	**0.0**	
Retaining walls -- (22)				**100**		66		**14 Walls**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	36.2	1.0	3.7	0.0	0.0	112.1
1-Ton Crew Cab, 4×4	300	Diesel	4			66	10		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	10	1.4	0.3	1.5	0.3	0.2	19.0
Motor Grader	250	Diesel	2			66	10		0.5992	0.1759	1.5242	0.0550	0.0506	229.0000	0.1398		10	12.0	3.5	30.5	1.1	1.0	151.1
Water Truck	350	Diesel	2			66	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	9.4	3.2	26.0	0.9	0.8	137.9
Backhoe/Front Loader	125	Diesel	2			66	10		0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		10	14.5	4.4	36.5	1.3	1.2	227.7

Drum Type Compactor	250	Diesel	2	66	10	4.8 days/wall	0.3595	0.1207	1.1333	0.0429	0.0395	122.2913	0.0109	10	7.2	2.4	22.7	0.9	0.8	80.7
Track Type Dozer	350	Diesel	2	66	10		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236	10	18.5	5.2	43.9	1.8	1.7	142.4
Concrete Mixer	350	Diesel	2	66	10		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100	10	6.2	2.2	21.8	0.7	0.6	89.8
Excavator	250	Diesel	2	66	10		0.5102	0.1657	1.3127	0.0023	0.0021	174.0000	0.0115	10	10.2	3.3	26.3	0.0	0.0	114.8
Dump Truck	350	Diesel	2	66	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146	10	9.4	3.2	26.0	0.9	0.8	137.9
Lowboy Truck/Trailer	300	Diesel	2	66	10		0.4236	0.1474	1.2027	0.0408	0.0375	188.0000	0.0133	10	8.5	2.9	24.1	0.8	0.8	124.1
														Total	**133.4**	**31.8**	**262.9**	**8.7**	**8.0**	**1337.6**
														Total (tons)	**4.4**	**1.1**	**8.7**	**0.3**	**0.3**	
														Grand Total (lb/day)	2165.6	409.8	3792.6	138.7	140.8	
														Grand Total (tons)	26.3	7.2	58.0	2.1	2.5	10600.2

Transmission and Subtransmission Construction Equipment and Workforce Estimates

Transmission (Segment 4) Construction Equipment and Workforce Estimates

Work Activity				Activity Production				EMFAC2011 Diesel Emission Factors (gms/mi) or OFFROAD Diesel Emissions Factors (lb/hr)							Average Speed (mph)	Miles per day or Hours per day	Estimated Emissions					
Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs/Day)	Estimated Production Per Day	CO	ROG	NO_X	PM_{10}	$PM_{2.5}$	CO_2	CH_4			CO	ROG	NO_X	PM_{10}	$PM_{2.5}$	CO_2e
																	(lbs/day)	(lbs/day)	(lbs/day)	(lbs/day)	(lbs/day)	(MT/yr)
Survey -- (1)				**4**	**10**		**12**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	1.4	0.0	0.1	0.0	0.0	0.7
3/4 Ton Pick-up Truck, 4×4	200	Gas	2		10	8	1.3 Miles/Day	2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	20	8	2.0	0.1	0.2	0.0	0.0	2.3
																Total	**3.5**	**0.1**	**0.4**	**0.0**	**0.0**	**3.0**
																Total (tons)	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	
Marshaling Yard -- (2)				**4**				3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	1.4	0.0	0.1	0.0	0.0	0.0
1-Ton Crew Cab, 4×4	300	Diesel	1		2	4		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	4	0.1	0.0	0.2	0.0	0.0	0.1
R/T Crane (M)	300	Diesel	1		2	5		0.3243	0.1077	0.9866	0.0348	0.0320	125.6000	0.0097		5	1.6	0.5	4.9	0.2	0.2	0.6
R/T Forklift	200	Diesel	1		2	5		0.3311	0.0524	0.3883	0.0214	0.0197	56.1000	0.0047		5	1.7	0.3	1.9	0.1	0.1	0.3
Water Truck	300	Diesel	1		2	10		0.4236	0.1474	1.2027	0.0408	0.0375	188.0000	0.0133		10	4.2	1.5	12.0	0.4	0.4	1.9
Jet A Fuel Truck			1		2	4		0.6148	0.2034	1.6679	0.0579	0.0533	260.0000	0.0183		4	2.5	0.8	6.7	0.2	0.2	1.0
Truck, Semi, Tractor	350	Diesel	1		2	6		0.5063	0.1560	1.3478	0.0449	0.0413	241.2000	0.0141		6	3.0	0.9	8.1	0.3	0.2	1.4
																Total	**14.6**	**4.1**	**34.0**	**1.2**	**1.1**	**5.3**
																Total (tons)	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	
R/W Clearing -- (3)				**5**	**30**		**12 Miles**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	1.8	0.1	0.2	0.0	0.0	3.3
1-Ton Crew Cab, 4×4	300	Diesel	1		39	10	0.4 Miles/Day	0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	10	0.4	0.1	0.4	0.1	0.1	2.8
Motor Grader	350	Diesel	1		39	7		0.5992	0.1759	1.5242	0.0550	0.0506	229.0000	0.1398		7	4.2	1.2	10.7	0.4	0.4	31.3
Water Truck	350	Diesel	2		39	7		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		7	6.6	2.3	18.2	0.6	0.6	57.1
Backhoe/Front Loader	350	Diesel	1		39	7		0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		7	5.1	1.5	12.8	0.4	0.4	47.1
Track Type Dozer	350	Diesel	1		39	9		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236		9	8.3	2.4	19.8	0.8	0.8	37.9
Lowboy Truck/Trailer	500	Diesel	1		39	5		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236		5	4.6	1.3	11.0	0.5	0.4	21.0
																Total	**31.0**	**8.8**	**22.9**	**2.8**	**2.6**	**200.4**
																Total (tons)	**0.6**	**0.2**	**1.4**	**0.1**	**0.1**	
Roads & Landing Work -- (4)				**10**	**38**		**47.3 Miles & 144 Pads**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	3.6	0.1	0.4	0.0	0.0	6.5
1-Ton Crew Cab, 4×4	300	Diesel	4		38	5	1.3 Miles/Day & 5 Structure Pads/Day	0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	5	0.7	0.2	0.8	0.1	0.1	5.5
Motor Grader	350	Diesel	2		38	5		0.5992	0.1759	1.5242	0.0550	0.0506	229.0000	0.1398		5	6.0	1.8	15.2	0.6	0.5	43.5
Water Truck	350	Diesel	4		38	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	158.8
Backhoe/Front Loader	350	Diesel	2		38	7		0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		7	10.1	3.1	25.6	0.9	0.6	91.8
Drum Type Compactor	250	Diesel	2		38	5		0.3595	0.1207	1.1333	0.0429	0.0395	122.2913	0.0109		5	3.6	1.2	11.3	0.4	0.4	23.2
Track Type Dozer	350	Diesel	2		38	7		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236		2	13.0	3.7	30.7	1.3	1.2	57.4
Excavator	300	Diesel	2		19	7		0.5102	0.1657	1.3127	0.0023	0.0021	174.0000	0.0115		7	7.1	2.3	18.4	0.0	0.0	23.1
Lowboy Truck/Trailer	500	Diesel	2		19	4		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236		4	7.4	2.1	17.6	0.7	0.7	16.4
																Total	**70.4**	**20.9**	**171.9**	**5.8**	**5.4**	**426.2**
																Total (tons)	**0.7**	**0.2**	**1.6**	**0.1**	**0.1**	
Guard Structure Installation -- (5)				**12**	**37**		**206 Structures**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	4.3	0.1	0.4	0.0	0.0	3.5
3/4-Ton Pick-up Truck, 4×4	300	Diesel	4	4	17	8	12 Structures/Day	2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	40	50	1.3	0.0	0.1	0.0	0.0	2.4
1-Ton Crew Cab Flat Bed, 4×4	300	Diesel	2		17	8		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	8	0.6	0.1	0.6	0.1	0.1	2.0
Compressor Trailer	120	Diesel	2		17	7		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		2	4.5	1.1	6.6	0.6	0.5	5.6
Auger Truck	500	Diesel	2		17	5		0.6134	0.2065	1.5945	0.0567	0.0522	272.0000	0.0186		5	6.1	2.1	15.9	0.6	0.5	23.1
Extendable Flat Bed Pole Truck	350	Diesel	2		17	8		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		8	7.5	2.6	20.8	0.2	0.7	28.4
R/T Crane (M)	500	Diesel	2		17	8		0.4948	0.1468	1.2979	0.0470	0.0432	180.0000	0.0132		8	7.9	2.3	20.8	0.8	0.7	24.5
Water Truck	350	Diesel	1		17	8		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		8	3.8	1.3	10.4	0.4	0.3	14.2
Extendable Flat Bed Pole Truck	350	Diesel	2		17	8		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		8	7.5	2.6	20.8	0.7	0.7	28.4
																Total	**43.6**	**12.3**	**96.5**	**3.8**	**3.5**	**132.1**
																Total (tons)	**0.4**	**0.1**	**0.6**	**0.0**	**0.0**	
Remove Existing Conductor & OHGW -- (6)				**36**	**146**		**240 Circuit Miles**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	20.3	0.6	2.1	0.0	0.0	138.9
1-Ton Crew Cab, 4×4	300	Diesel	16		146	10	1.7 Miles/Day	0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	10	5.6	1.2	6.0	1.0	1.0	167.7
Man-lift / Bucket Truck	350	Diesel	12		146	10		0.3637	0.0870	0.9773	0.0354	0.0326	143.9610	0.0079		10	43.6	10.4	117.3	4.3	3.9	1261.1
Sleeving Truck	300	Diesel	4		146	5		0.4236	0.1474	1.2027	0.0408	0.0375	188.0000	0.0133		5	8.5	2.9	24.1	0.8	0.8	274.5
R/T Crane (M)	300	Diesel	4	4	146	5		0.3243	0.1077	0.9866	0.0348	0.0320	125.6000	0.0097		5	6.5	2.2	19.7	0.7	0.6	163.4
Flat Bed Trailer	N/A	N/A	12		131	3		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		3	0.0	0.0	0.0	0.0	0.0	0.0
Truck, Semi, Tractor	350	Diesel	4		131	3		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		3	5.7	1.9	15.6	0.5	0.5	164.3
Bull Wheel Puller	500	Diesel	4		99	5		0.6064	0.2032	1.8639	0.0630	0.0580	265.0000	0.0183		5	12.1	4.1	37.3	1.3	1.2	262.4
Water Truck	350	Diesel	4		99	6		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		6	11.3	3.9	31.2	1.1	1.0	248.3
Hydraulic Rewind Puller	300	Diesel	4		99	5		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		5	6.2	2.2	21.8	0.7	0.6	134.6
																Total	**110.7**	**20.5**	**275.1**	**10.4**	**0.6**	**2835.1**
																Total (tons)	**5.9**	**1.5**	**13.6**	**0.5**	**0.5**	
Remove Existing Lattice Steel Towers -- (7)				**32**	**53**		**132 Towers**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	11.6	0.3	1.2	0.0	0.0	28.8
1-Ton Crew Cab, 4×4	300	Diesel	8		53	8		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	8	2.3	0.5	2.4	0.4	0.4	24.3

R/T Crane (M)	215	Diesel	8		53	5	2.5 Towers/Day	0.3745	0.0978	0.8256	0.0361	0.0332	97.2000	0.0088		5	15.0	3.9	33.0	1.4	1.3	103.0
Compressor Trailer	120	Diesel	8		53	10		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		10	25.7	6.1	37.5	3.3	3.1	99.5
Flat Bed Truck/Trailer	350	Diesel	4		53	8		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		8	15.1	5.2	41.6	1.4	1.3	177.2
Water Truck	350	Diesel	4		53	6		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		6	11.3	3.9	31.2	1.1	1.0	132.9
															Total		80.9	18.8	140.8	7.7	7.1	565.9
															Total (tons)		2.1	0.5	5.8	0.2	0.2	
Remove Existing Foundations -- (8)				16	54		132	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	5.8	0.2	0.6	0.0	0.0	14.7
1-Ton Crew Cab Flat Bed, 4x4	300	Diesel	4		54	10	2.5 Towers/Day	0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	10	1.4	0.3	1.5	0.3	0.2	15.5
Dump Truck	350	Diesel	4		54	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	225.7
Backhoe/Front Loader	350	Diesel	4		54	10		0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		10	29.0	8.7	73.0	2.5	2.3	372.6
Water Truck	350	Diesel	4		54	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	225.7
															Total		73.8	22.2	178.2	6.4	5.8	854.2
															Total (tons)		2.0	0.6	4.8	0.2	0.2	
Remove Existing Tubular Steel Poles -- (9)				24	1		1 TSP	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	8.7	0.2	0.9	0.0	0.0	0.4
3/4-Ton Pick-up Truck, 4x4	300	Diesel	8		1	8	3.8 Steel Poles/Day	2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090		8	182.8	6.6	20.1	0.3	0.3	20.7
R/T Crane (M)	300	Diesel	4		1	5		0.3243	0.1077	0.9866	0.0348	0.0320	125.6000	0.0097		5	6.5	2.2	19.7	0.7	0.6	1.3
Compressor Trailer	120	Diesel	4		1	10		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		10	12.9	3.0	18.7	1.7	1.5	0.9
Water Truck	350	Diesel	4		1	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	4.2
															Total		229.7	18.5	111.5	4.4	4.1	27.5
															Total (tons)		0.1	0.0	0.1	0.0	0.0	
Install LST Foundations -- (10)				28	44		141 LST's	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	10.1	0.3	1.0	0.0	0.0	20.9
1-Ton Crew Cab Flat Bed, 4x4	300	Diesel	8		44	5	3.2 LSTs/Day	0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	5	1.4	0.3	1.5	0.3	0.2	12.6
R/T Crane (M)	300	Diesel	4		44	7		0.3243	0.1077	0.9866	0.0348	0.0320	125.6000	0.0097		7	9.1	3.0	27.6	1.0	0.9	77.4
Backhoe/Front Loader	200	Diesel	4		44	10		0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		10	29.0	8.7	73.0	2.5	2.3	303.6
Auger Truck	500	Diesel	4		44	10		0.6134	0.2065	1.5945	0.0567	0.0522	272.0000	0.0186		10	24.5	8.3	63.8	2.3	2.1	239.4
10-cu. yd. Dump Truck	350	Diesel	8		44	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	37.7	13.0	104.1	3.6	3.3	367.8
Kaman K-MAX		Jet A	1		44	7		1.3532	1.1287	7.4027	0.2005	0.1845	1930.3207	0.0000		7	9.5	7.9	51.8	1.4	1.3	297.3
4000 gallon Water Truck	350	Diesel	4		44	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	183.9
10-cu. yd. Concrete Mixer Truck	425	Diesel	12		44	7		0.5422	0.1843	1.4476	0.0507	0.0467	240.5000	0.0166		7	45.5	15.5	121.6	4.3	3.9	444.4
															Total		185.7	63.5	496.5	17.1	15.7	1947.4
															Total (tons)		4.1	1.4	10.8	0.4	0.3	
LST Steel Haul -- (11)				8	58		141 LST's	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	2.9	0.1	0.3	0.0	0.0	7.6
1-Ton Crew Cab Flat Bed, 4x4	300	Diesel	4		56	10	2.5 LSTs/Day	0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	10	1.4	0.3	1.5	0.3	0.2	16.1
Truck/Trailer	400	Diesel	4		56	10		0.5185	0.1769	1.3986	0.0487	0.0448	230.0000	0.0160		10	20.7	7.1	55.9	1.9	1.8	257.6
Bell 212		Jet A	2		33	7		1.2590	1.0558	9.3516	0.2472	0.2275	2198.7342	0.0000		7	17.6	14.8	130.9	3.5	3.2	507.9
4000 gallon Water Truck	350	Diesel	4		56	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	234.1
R/T Forklift	200	Diesel	2		56	6		0.3311	0.0524	0.3883	0.0214	0.0197	56.1000	0.0047		6	4.0	0.6	4.7	0.3	0.2	18.8
															Total		85.5	28.4	245.4	7.7	7.1	1042.1
															Total (tons)		1.8	0.8	6.9	0.2	0.2	
LST Steel Assembly -- (12)				40	105		141 LST's	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	14.5	0.4	1.5	0.0	0.0	71.3
3/4-Ton Pick-up Truck, 4x4	300	Diesel	4		105	5	1.4 LSTs/Day	2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	20	5	2.5	0.1	0.3	0.0	0.0	30.0
1-Ton Crew Cab Flat Bed, 4x4	300	Diesel	6		105	5		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	5	1.1	0.2	1.1	0.2	0.2	22.6
R/T Forklift	125	Diesel	4		105	7		0.2158	0.0390	0.2571	0.0206	0.0190	31.2000	0.0035		7	6.0	1.1	7.2	0.6	0.5	45.0
R/T Crane (L)	300	Diesel	4		105	10		0.3243	0.1077	0.9866	0.0348	0.0320	125.6000	0.0097		10	13.0	4.3	39.5	1.4	1.3	263.8
Kaman K-MAX		Jet A	1		105	7		1.3532	1.1287	7.4027	0.2005	0.1845	1930.3207	0.0000		7	9.5	7.9	51.8	1.4	1.3	709.4
Compressor Trailer	120	Diesel	4		105	6		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		6	7.7	1.8	11.2	1.0	0.9	59.2
															Total		54.2	15.8	112.8	4.8	4.2	1202.1
															Total (tons)		2.8	0.8	5.8	0.2	0.2	
LST Erection -- (13)				48	73		141 LST's	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	17.4	0.5	1.8	0.0	0.0	59.5
3/4-Ton Pick-up Truck, 4x4	300	Diesel	8		73	8	2 LSTs/Day	2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	20	8	8.1	0.3	0.9	0.0	0.0	66.8
1-Ton Crew Cab Flat Bed, 4x4	300	Diesel	8		73	8		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	8	2.3	0.5	2.4	0.4	0.4	33.5
4000 gallon Water Truck	350	Diesel	4		73	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	305.1
R/T Crane (M)	215	Diesel	4		73	7		0.3745	0.0978	0.8256	0.0361	0.0332	97.2000	0.0088		7	10.5	2.7	23.1	1.0	0.0	99.3
R/T Crane (L)	350	Diesel	4		73	7		0.3669	0.1175	1.0644	0.0378	0.0348	139.2000	0.0106		7	10.3	3.3	29.8	1.1	1.0	142.3
															Total		87.8	18.8	110.0	4.8	4.0	706.8
															Total (tons)		2.5	0.5	4.0	0.1	0.1	
Install Tubular Steel Pole Foundations -- (14)				24	1		1 TSP's	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	8.7	0.2	0.9	0.0	0.0	0.4
1-Ton Crew Cab Flat Bed, 4x4	300	Diesel	12		1	5	2.5 TSPs/Day	0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	5	2.1	0.5	2.3	0.4	0.4	0.4
R/T Crane (M)	300	Diesel	4		1	7		0.3243	0.1077	0.9866	0.0348	0.0320	125.6000	0.0097		7	9.1	3.0	27.6	1.0	0.9	1.8
Backhoe/Front Loader	200	Diesel	4		1	10		0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		10	29.0	8.7	73.0	2.5	2.3	6.9
Auger Truck	500	Diesel	4		1	10		0.6134	0.2065	1.5945	0.0567	0.0522	272.0000	0.0186		10	24.5	8.3	63.8	2.3	2.1	5.4
4000 gallon Water Truck	350	Diesel	4		1	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	4.2
10-cu. yd. Dump Truck	350	Diesel	8		1	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	37.7	13.0	104.1	3.6	3.3	8.4
10-cu. yd. Concrete Mixer Truck	425	Diesel	12		1	6		0.6064	0.2032	1.8639	0.0630	0.0580	265.0000	0.0183		6	43.7	14.6	134.2	4.5	4.2	9.5
															Total		173.6	54.8	457.9	16.1	14.8	87.0
															Total (tons)		0.1	0.0	0.2	0.0	0.0	
Steel Pole Haul -- (15)				8	1		1 TSP's	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	2.9	0.1	0.3	0.0	0.0	0.1
3/4-Ton Pick-up Truck, 4x4	300	Diesel	4		1	8	10 Steel Poles/Day	2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	20	8	4.0	0.1	0.4	0.0	0.0	0.5
4000 gallon Water Truck	350	Diesel	4		1	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	4.2
R/T Crane (L)	350	Diesel	2		1	10		0.3669	0.1175	1.0644	0.0378	0.0348	139.2000	0.0106		10	7.3	2.3	21.3	0.8	0.7	1.4
40' Flat Bed Truck/Trailer	350	Diesel	4		1	8		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		8	15.1	5.2	41.6	1.4	1.3	3.3
															Total		48.2	14.3	115.7	4.0	3.7	9.5
															Total (tons)		0.0	0.0	0.1	0.0	0.0	

Steel Pole Assembly -- (16)				**24**	**1**		**1 TSP's**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	8.7	0.2	0.9	0.0	0.0	0.4
3/4-Ton Pick-up Truck, 4×4	300	Diesel	8		1	8		2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090		8	182.8	6.6	20.1	0.3	0.3	20.7
4000 gallon Water Truck	350	Diesel	4		1	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	4.2
1-Ton Crew Cab Flat Bed, 4×4	300	Diesel	8		1	6	5 Steel Poles/Day	0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	6	1.7	0.4	1.8	0.3	0.3	0.3
Compressor Trailer	120	Diesel	4		1	6		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		6	7.7	1.8	11.2	1.0	0.9	0.6
R/T Crane (L)	350	Diesel	4		1	6		0.3669	0.1175	1.0644	0.0378	0.0348	139.2000	0.0106		6	8.8	2.8	25.5	0.9	0.8	1.7
															Total		**228.6**	**18.4**	**111.6**	**4.3**	**3.9**	**27.9**
															Total (tons)		0.1	0.0	0.1	0.0	0.0	
Steel Pole Erection -- (17)				**24**	**1**		**1 TSP's**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	8.7	0.2	0.9	0.0	0.0	0.4
3/4-Ton Pick-up Truck, 4×4	300	Diesel	8		1	5		2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090		5	114.3	4.1	12.6	0.2	0.2	13.0
1-Ton Crew Cab Flat Bed, 4×4	300	Diesel	8		1	5		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	5	1.4	0.3	1.5	0.3	0.2	0.3
4000 gallon Water Truck	350	Diesel	4		1	10	5 Steel Poles/Day	0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	4.2
Compressor Trailer	120	Diesel	4		1	5		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		5	6.4	1.5	9.4	0.8	0.8	0.5
R/T Crane (L)	350	Diesel	4		1	6		0.3669	0.1175	1.0644	0.0378	0.0348	139.2000	0.0106		6	8.8	2.8	25.5	0.9	0.8	1.7
															Total		**158.4**	**15.5**	**101.9**	**4.0**	**3.7**	**20.0**
															Total (tons)		0.1	0.0	0.1	0.0	0.0	
H-Frame Installation -- (18)				**12**	**5**		**1 Structures**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	4.3	0.1	0.4	0.0	0.0	1.0
3/4 Ton Pick up Truck, 4×4	300	Diesel	4		5	8		2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	20	8	4.0	0.1	0.4	0.0	0.0	2.3
1 Ton Crew Cab Flat Bed, 4×4	300	Diesel	2		5	8		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	8	0.6	0.1	0.6	0.1	0.1	0.6
Compressor Trailer	120	Diesel	2		5	7		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		7	4.5	1.1	6.6	0.6	0.5	1.6
Auger Truck	500	Diesel	2		5	5		0.6134	0.2065	1.5945	0.0567	0.0522	272.0000	0.0186		5	6.1	2.1	15.9	0.6	0.5	6.8
Extendable Flat Bed Pole Truck	350	Diesel	2		5	8		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		8	7.5	2.6	20.8	0.7	0.7	8.4
R/T Crane (M)	500	Diesel	2		5	8		0.4948	0.1468	1.2979	0.0470	0.0432	180.0000	0.0132		8	7.9	2.3	20.8	0.8	0.7	7.2
Water Truck	350	Diesel	1		5	8		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		8	3.8	1.3	10.4	0.4	0.3	4.2
Extendable Flat Bed Pole Truck	350	Diesel	2		5	8		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		8	7.5	2.6	20.8	0.7	0.7	8.4
															Total		46.3	12.4	96.8	3.8	3.5	40.4
															Total (tons)		0.1	0.0	0.2	0.0	0.0	
Install Conductor -- (10)				**220**	**30**		**45 Circuit Miles**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	79.6	2.2	8.1	0.1	0.1	112.1
3/4-Ton Pick-up Truck, 4×4	300	Diesel	4	4	30	10		2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	40	50	9.4	0.3	1.0	0.0	0.0	4.3
1-Ton Crew Cab Flat Bed, 4×4	300	Diesel	8		30	10		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	10	2.8	0.6	3.0	0.5	0.5	17.2
Wire Truck/Trailer	350	Diesel	4		20	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	83.6
R/T Crane (M)	215	Diesel	4		30	10		0.3745	0.0978	0.8256	0.0361	0.0332	97.2000	0.0088		10	15.0	3.9	33.0	1.4	1.3	58.3
Dump Truck	350	Diesel	2		30	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	9.4	3.2	26.0	0.9	0.8	62.7
Bucket Truck	350	Diesel	4		30	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	125.4
22-Ton Manitex	350	Diesel	4		30	10		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		10	12.3	4.4	43.6	1.4	1.3	81.6
Splicing Rig	350	Diesel	2		8	5		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		5	3.1	1.1	10.9	0.3	0.3	5.4
Splicing Lab	300	Diesel	2		8	5	1.6 Miles/Day	0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		5	3.1	1.1	10.9	0.3	0.3	5.4
Sock Line Puller	300	Diesel	2		8	6		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		6	3.7	1.3	13.1	0.4	0.4	6.5
Bull Wheel Puller	350	Diesel	2		16	10		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		10	6.2	2.2	21.8	0.7	0.6	21.8
Backhoe/Front Loader	125	Diesel	2		16	8		0.7245	0.2186	1.8255	0.0027	0.0577	345.0000	0.0107		8	11.6	3.5	29.2	1.0	0.9	44.2
D8 Cat	350	Diesel	1		16	8		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		8	2.5	0.9	8.7	0.3	0.3	8.7
Hughes 500 E Helicopter		Jet A	2		16	7		2.1989	1.7655	1.4214	0.0445	0.0409	763.4927	0.0000		7	30.8	24.7	19.9	0.6	0.6	85.5
Fuel, Helicopter Support Truck	300	Diesel	2		10	7		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		7	4.3	1.6	15.3	0.5	0.4	15.2
Sag Cat w/ 2 winches	350	Diesel	1		8	10		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		10	3.1	1.1	10.9	0.3	0.3	5.4
Static Truck/ Tensioner	350	Diesel	2		16	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	9.4	3.2	26.0	0.9	0.8	33.4
															Total		**243.9**	**69.8**	**385.5**	**13.4**	**12.3**	**778.9**
															Total (tons)		2.0	0.5	3.1	0.1	0.1	
Guard Structure Removal -- (20)				**12**	**12**		**206 Structures**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	4.3	0.1	0.4	0.0	0.0	2.4
3/4-Ton Pick-up Truck, 4×4	300	Diesel	4		12	7		2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	40	50	3.8	0.1	0.4	0.0	0.0	0.0
1-Ton Crew Cab Flat Bed, 4×4	300	Diesel	4		12	7		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	7	1.0	0.2	1.1	0.2	0.2	2.4
Compressor Trailer	120	Diesel	4		12	7		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		7	9.0	2.1	13.1	1.2	1.1	7.9
Extendable Flat Bed Pole Truck	350	Diesel	4		12	6	17.2 Structures/Day	0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		6	11.3	3.9	31.2	1.1	1.0	30.1
Water Truck	300	Diesel	2		12	10		0.4236	0.1474	1.2027	0.0408	0.0375	188.0000	0.0133		10	8.5	2.9	24.1	0.8	0.8	22.6
R/T Crane (M)	500	Diesel	2		12	8		0.4948	0.1468	1.2979	0.0470	0.0432	180.0000	0.0132		8	7.9	2.3	20.8	0.8	0.7	17.3
80ft. Hydraulic Man-lift / Bucket Truck	350	Diesel	2		12	4		0.3637	0.0870	0.9773	0.0354	0.0326	143.9610	0.0079		4	2.9	0.7	7.8	0.3	0.3	6.9
															Total		**48.7**	**12.5**	**98.9**	**4.3**	**3.9**	**80.6**
															Total (tons)		**0.3**	**0.1**	**0.6**	0.0	0.0	
Restoration -- (21)				**14**	**5**		**12 Miles**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	5.1	0.1	0.5	0.0	0.0	1.2
1-Ton Crew Cab, 4×4	300	Diesel	4		5	2		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	2	0.3	0.1	0.3	0.1	0.0	0.3
Motor Grader	350	Diesel	2		5	6		0.5992	0.1759	1.5242	0.0550	0.0506	229.0000	0.1398		6	7.2	2.1	18.3	0.7	0.6	6.9
Water Truck	350	Diesel	2		5	8		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		8	7.5	2.6	20.8	0.7	0.7	8.4
Backhoe/Front Loader	350	Diesel	2		5	6	2.5 Miles/Day	0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		6	8.7	2.6	21.9	0.8	0.7	10.4
Drum Type Compactor	250	Diesel	2		5	6		0.3595	0.1207	1.1333	0.0429	0.0395	122.2913	0.0109		6	4.3	1.4	13.6	0.5	0.5	3.7
Track Type Dozer	350	Diesel	2		5	6		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236		6	11.1	3.1	26.3	1.1	1.0	6.5
Lowboy Truck/Trailer	300	Diesel	2		5	3		0.4236	0.1474	1.2027	0.0408	0.0375	188.0000	0.0133		3	2.5	0.9	7.2	0.2	0.2	2.8
															Total		46.7	13.0	109.0	4.0	3.7	40.0
															Total (tons)		0.1	0.0	0.3	0.0	0.0	
Retaining walls -- (22)				**100**	**79**		**16 Walls**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	36.2	1.0	3.7	0.0	0.0	134.2
1-Ton Crew Cab, 4×4	300	Diesel	4		79	10		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	10	1.4	0.3	1.5	0.3	0.2	22.7
Motor Grader	250	Diesel	2		79	10		0.5992	0.1759	1.5242	0.0550	0.0506	229.0000	0.1398		10	12.0	3.5	30.5	1.1	1.0	180.9
Water Truck	350	Diesel	2		79	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	9.4	3.2	26.0	0.9	0.8	165.1
Backhoe/Front Loader	125	Diesel	2		79	10		0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		10	14.5	4.4	36.5	1.3	1.2	272.6

Drum Type Compactor	250	Diesel	2	79	10	4.8 days/wall	0.3595	0.1207	1.1333	0.0429	0.0395	122.2913	0.0109		10	7.2	2.4	22.7	0.9	0.8	96.6
Track Type Dozer	350	Diesel	2	79	10		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236		10	18.5	5.2	43.9	1.8	1.7	170.5
Concrete Mixer	350	Diesel	2	79	10		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		10	6.2	2.2	21.8	0.7	0.6	107.4
Excavator	250	Diesel	2	79	10		0.5102	0.1657	1.3127	0.0023	0.0021	174.0000	0.0115		10	10.2	3.3	26.3	0.0	0.0	137.5
Dump Truck	350	Diesel	2	79	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	9.4	3.2	26.0	0.9	0.8	165.1
Lowboy Truck/Trailer	300	Diesel	2	79	10		0.4236	0.1474	1.2027	0.0408	0.0375	188.0000	0.0133		10	8.5	2.9	24.1	0.8	0.8	148.5
														Total		**133.4**	**31.8**	**262.9**	**8.7**	**8.0**	**1601.1**
														Total (tons)		**5.3**	**1.3**	**10.4**	**0.3**	**0.3**	
														Grand Total (lb/day)		2167.8	409.8	3792.8	138.7	127.6	
														Grand Total (tons)		31.1	8.6	69.0	2.5	2.3	12590.4

Transmission and Subtransmission Construction Equipment and Workforce Estimates

Transmission (Segment 5) Construction Equipment and Workforce Estimates

Work Activity				Activity Production				EMFAC2011 Diesel Emission Factors (gms/mi) or OFFROAD Diesel Emissions Factors (lb/hr)							Average Speed (mph)	Miles per day or Hours per day	Estimated Emissions					
Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs/Day)	Estimated Production Per Day	CO	ROG	NO_x	PM_{10}	$PM_{2.5}$	CO_2	CH_4			CO	ROG	NO_x	PM_{10}	$PM_{2.5}$	CO_2e
																	(lbs/day)	(lbs/day)	(lbs/day)	(lbs/day)	(lbs/day)	(MT/yr)
Survey -- (1)				**4**	**8**		**8 Miles**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	1.4	0.0	0.1	0.0	0.0	0.5
3/4-Ton Pick-up Truck, 4×4	200	Gas	2		8	8	1.3 Miles/Day	2.8566	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	2.5	0.1	0.3	0.0	0.0	0.0
															Total		**4.0**	**0.1**	**0.4**	**0.0**	**0.0**	**0.5**
															Total (tons)		**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	
Marshalling Yard -- (2)				**1**				3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	0.4	0.0	0.0	0.0	0.0	0.0
1-Ton Crew Cab, 4×4	300	Diesel	1		2	4		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	4	0.1	0.0	0.2	0.0	0.0	0.1
R/T Crane (M)	300	Diesel	1		2	5		0.3243	0.1077	0.9866	0.0348	0.0320	125.6000	0.0097		5	1.6	0.5	4.9	0.2	0.2	0.6
4,000g Water Truck	350	Diesel	1		2	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	4.7	1.6	13.0	0.4	0.4	2.1
Jet A Fuel Truck			1		2	4		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		4	1.9	0.6	5.2	0.2	0.2	0.8
R/T Fork Lift	200	Diesel	1		2	5		0.3311	0.0524	0.3883	0.0214	0.0197	56.1000	0.0047		5	1.7	0.3	1.9	0.1	0.1	0.3
Truck, Semi, Tractor	350	Diesel	1		2	6		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		6	2.8	1.0	7.8	0.3	0.2	1.3
															Total		**15.2**	**4.1**	**33.1**	**1.2**	**1.1**	**5.1**
															Total (tons)		**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	
R/W Clearing -- (3)				**5**	**29**		**9Miles**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	1.8	0.1	0.2	0.0	0.0	2.5
1-Ton Crew Cab, 4×4	300	Diesel	1		29	10	0.4 Miles/Day	0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	10	0.4	0.1	0.4	0.1	0.1	2.1
Motor Grader	350	Diesel	1		29	7		0.5992	0.1759	1.5242	0.0550	0.0506	229.0000	0.1398		7	4.2	1.2	10.7	0.4	0.4	23.2
Water truck	350	Diesel	2		29	7		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		7	6.0	2.3	18.2	0.6	0.6	42.4
Backhoe/Front Loader	350	Diesel	1		29	7		0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		7	5.1	1.5	12.8	0.4	0.4	35.0
Track Type Dozer	350	Diesel	1		29	9		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236		9	8.3	2.4	19.8	0.8	0.8	28.2
Lowboy Truck/Trailer	500	Diesel	1		29	5		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236		5	4.6	1.3	11.0	0.5	0.4	15.6
															Total		**21.0**	**6.8**	**72.0**	**2.8**	**2.6**	**148.0**
															Total (tons)		**0.4**	**0.1**	**1.1**	**0.0**	**0.0**	
Roads & Landing Work -- (4)				**10**	**22**		**13.7 Miles & 100 Pads**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	3.6	0.1	0.4	0.0	0.0	3.7
1-Ton Crew Cab, 4×4	300	Diesel	4		22	5	2.5 Miles/Day & 10 Structure Pads/Day	0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	5	0.7	0.2	0.8	0.1	0.1	3.2
Motor Grader	350	Diesel	2		22	5		0.5992	0.1759	1.5242	0.0550	0.0506	229.0000	0.1398		5	6.0	1.8	15.2	0.6	0.5	25.2
Water Truck	350	Diesel	4		22	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	92.0
Backhoe/Front Loader	350	Diesel	2		22	7		0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		7	10.1	3.1	25.6	0.9	0.8	53.1
Drum Type Compactor	250	Diesel	2		22	5		0.3595	0.1207	1.1333	0.0429	0.0395	122.2913	0.0109		5	3.6	1.2	11.3	0.4	0.4	13.5
Track Type Dozer	350	Diesel	2		22	7		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236		7	13.0	3.7	30.7	1.3	1.2	33.2
Excavator	300	Diesel	2		11	7		0.5102	0.1657	1.3127	0.0023	0.0021	174.0000	0.0115		7	7.1	2.3	18.4	0.0	0.0	13.4
Lowboy Truck/Trailer	500	Diesel	2		11	4		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236		4	7.4	2.1	17.6	0.7	0.7	9.5
															Total		**70.4**	**20.9**	**171.9**	**5.8**	**5.4**	**240.8**
															Total (tons)		**0.4**	**0.1**	**0.9**	**0.0**	**0.0**	
Guard Structure Installation -- (5)				**12**	**1**		**6 Structures**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	4.3	0.1	0.4	0.0	0.0	0.2
3/4 Ton Pick up Truck, 4×4	275	Diesel	4	4	1	8	12 Structures/Day	2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	40	50	1.3	0.0	0.1	0.0	0.0	0.1
1-Ton Crew Cab Flat Bed, 4×4	300	Diesel	2		1	8		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	8	0.6	0.1	0.6	0.1	0.1	0.1
Compressor Trailer	120	Diesel	2		1	7		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		7	4.5	1.1	6.6	0.6	0.5	0.3
Auger Truck	500	Diesel	2		1	5		0.6134	0.2065	1.5945	0.0567	0.0522	272.0000	0.0186		5	6.1	2.1	15.9	0.6	0.5	1.4
Extendable Flat Bed Pole Truck	350	Diesel	2		1	8		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		8	7.5	2.6	20.8	0.7	0.7	1.7
R/T Crane (M)	500	Diesel	2		1	8		0.4948	0.1468	1.2979	0.0470	0.0432	180.0000	0.0132		8	7.9	2.3	20.8	0.8	0.7	1.4
Water truck	350	Diesel	4		1	8		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		8	15.1	5.2	41.6	1.4	1.3	3.3
Man-lift/Bucket Truck	350	Diesel	2		1	8		0.3637	0.0870	0.9773	0.0354	0.1358	143.9610	0.0079		8	5.8	1.4	15.6	0.6	2.2	1.2
															Total		**53.1**	**14.9**	**122.5**	**4.7**	**6.0**	**9.8**
															Total (tons)		**0.0**	**0.0**	**0.1**	**0.0**	**0.0**	
Install LST Foundations -- (6)				**29**	**23**		**72 LST's**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	10.1	0.3	1.0	0.0	0.0	10.9
3/4-Ton Pick-up Truck, 4×4	275	Diesel	4	4	23	5	3.2 LSTs/Day	2.8560	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	40	50	1.3	0.0	0.1	0.0	0.0	3.3
1-Ton Crew Cab Flat Bed, 4×4	300	Diesel	8		23	5		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	5	1.4	0.3	1.5	0.3	0.2	6.6
Backhoe/Front Loader	200	Diesel	4		23	10		0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		10	29.0	8.7	73.0	2.5	2.3	158.7
Auger Truck	500	Diesel	4		23	10		0.6134	0.2065	1.5945	0.0567	0.0522	272.0000	0.0186		10	24.5	8.3	63.8	2.3	2.1	125.1
Dump Truck	350	Diesel	8		23	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	37.7	13.0	104.1	3.6	3.3	192.3
4000 gallon Water Truck	350	Diesel	4		23	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	96.1
Concrete Mixer Truck	425	Diesel	12		23	7		0.6064	0.2032	1.8639	0.0630	0.0580	265.0000	0.0183		7	50.9	17.1	156.6	5.3	4.9	256.0
															Total		**172.8**	**54.2**	**452.1**	**15.7**	**14.5**	**848.1**
															Total (tons)		**2.0**	**0.6**	**5.2**	**0.2**	**0.2**	
LST Steel Haul -- (7)				**8**	**20**		**72 LST's**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	2.9	0.1	0.3	0.0	0.0	3.0
1-Ton Crew Cab Flat Bed, 4×4	300	Diesel	4		29	10	2.5 LSTs/Day	0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	10	1.4	0.3	1.5	0.3	0.2	8.3
Water Truck	350	Diesel	2		29	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	9.4	3.2	26.0	0.9	0.8	60.6
Flat Bed Truck/Trailer	350	Diesel	2		29	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	9.4	3.2	26.0	0.9	0.8	60.6

Rough Terrain Fork Lift	200	Diesel	2		79	8		0.3311	0.0524	0.3883	0.0214	0.0197	56.1000	0.0047		8	5.3	0.8	6.2	0.3	0.3	13.0
															Total		**28.4**	**7.7**	**60.0**	**2.4**	**2.2**	**148.5**
															Total (tons)		**0.4**	**0.1**	**0.9**	**0.0**	**0.0**	
LST Steel Assembly -- (8)				**40**	**34**		**72 LST's**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	14.5	0.4	1.5	0.0	0.0	36.7
3/4 Ton Pick-up Truck, 4×4	300	Diesel	4	4	54	5		2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	40	50	1.3	0.0	0.1	0.0	0.0	7.7
1-Ton Crew Cab Flat Bed, 4×4	300	Diesel	6		54	5		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	5	1.1	0.2	1.1	0.2	0.2	11.6
Rough Terrain Fork Lift	200	Diesel	4		54	7	1.4 LSTs/Day	0.3311	0.0524	0.3883	0.0214	0.0197	56.1000	0.0047		7	9.3	1.5	10.9	0.6	0.6	42.4
R/T Crane (L)	300	Diesel	4		54	10		0.3243	0.1077	0.9866	0.0348	0.0320	125.6000	0.0097		10	13.0	4.3	39.5	1.4	1.3	135.6
Compressor Trailer	120	Diesel	4		54	7		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		7	9.0	2.1	13.1	1.2	1.1	35.5
															Total		**48.0**	**8.6**	**66.2**	**3.4**	**3.1**	**269.6**
															Total (tons)		**1.3**	**0.2**	**1.8**	**0.1**	**0.1**	
LST Traction -- (9)				**48**	**38**		**72 LST's**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	17.4	0.5	1.8	0.0	0.0	31.0
3/4-Ton Pick-up Truck, 4×4	300	Diesel	8	8	38	5		2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	40	50	2.5	0.1	0.3	0.0	0.0	10.9
1-Ton Crew Cab Flat Bed, 4×4	300	Diesel	8		38	5		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	5	1.4	0.3	1.5	0.3	0.2	10.9
Water Truck	350	Diesel	2		38	10	2 LSTs/Day	0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	9.4	3.2	26.0	0.9	0.8	79.4
R/T Crane (M)	500	Diesel	4		38	7		0.4948	0.1468	1.2979	0.0470	0.0432	180.0000	0.0132		7	13.9	4.1	36.3	1.3	1.2	95.8
Compressor Trailer	120	Diesel	4		38	7		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		7	9.0	2.1	13.1	1.2	1.1	25.0
R/T Crane (L)	350	Diesel	4		38	7		0.3669	0.1175	1.0644	0.0378	0.0348	139.2000	0.0106		7	10.3	3.3	29.8	1.1	1.0	74.1
															Total		**85.1**	**18.9**	**120.8**	**4.8**	**4.4**	**327.0**
															Total (tons)		**1.2**	**0.3**	**2.1**	**0.1**	**0.1**	
Install Tubular Steel Pole Foundations -- (10)				**24**	**15**		**36 TSP's**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	8.7	0.2	0.9	0.0	0.0	6.1
1-Ton Crew Cab Flat Bed, 4×4	300	Diesel	12		15	5		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	5	2.1	0.5	2.3	0.4	0.4	6.5
R/T Crane (M)	300	Diesel	4		15	7		0.3243	0.1077	0.9866	0.0348	0.0320	125.6000	0.0097		7	9.1	3.0	27.6	1.0	0.9	26.4
Backhoe/Front Loader	200	Diesel	4		15	10		0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		10	29.0	8.7	73.0	2.5	2.3	103.5
Auger Truck	500	Diesel	4		11	10	2.5 TSPs/Day	0.6134	0.2065	1.5945	0.0567	0.0522	272.0000	0.0186		10	24.5	8.3	63.8	2.3	2.1	59.8
4000 gallon Water Truck	350	Diesel	4		15	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	62.7
Dump Truck	350	Diesel	8		15	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	37.7	13.0	104.1	3.6	3.3	125.4
Concrete Mixer Truck	425	Diesel	12		11	6		0.6064	0.2032	1.8639	0.0630	0.0580	265.0000	0.0183		6	43.7	14.6	134.2	4.5	4.2	104.9
															Total		**174.8**	**55.1**	**460.0**	**16.1**	**14.9**	**495.3**
															Total (tons)		**1.0**	**0.3**	**2.5**	**0.1**	**0.1**	
Steel Pole Haul -- (11)				**8**	**4**		**30 TSP's**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	2.9	0.1	0.3	0.0	0.0	0.5
3/4-Ton Pick-up Truck, 4×4	300	Diesel	4	4	4	8		2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	40	50	1.3	0.0	0.1	0.0	0.0	0.6
4000 gallon Water Truck	350	Diesel	4		4	10	10 Steel Poles/Day	0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	16.7
R/T Crane (M)	350	Diesel	2		4	6		0.3669	0.1175	1.0644	0.0378	0.0348	139.2000	0.0106		6	4.4	1.4	12.8	0.5	0.4	3.3
40' Flat Bed Truck/ Trailer	400	Diesel	4		4	10		0.5185	0.1769	1.3986	0.0487	0.0448	230.0000	0.0160		10	20.7	7.1	55.9	1.9	1.8	18.4
															Total		**48.1**	**15.1**	**121.2**	**4.2**	**3.8**	**39.6**
															Total (tons)		**0.1**	**0.0**	**0.2**	**0.0**	**0.0**	
Steel Pole Assembly -- (12)				**24**	**8**		**36 TSP's**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	8.7	0.2	0.9	0.0	0.0	3.3
3/4-Ton Pick-up Truck, 4×4	300	Diesel	8	8	8	6		2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	40	50	2.5	0.1	0.3	0.0	0.0	2.3
1-Ton Crew Cab Flat Bed, 4×4	300	Diesel	8		8	6		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	6	1.7	0.4	1.8	0.3	0.3	2.8
4000 gallon Water Truck	350	Diesel	4		8	10	5 Steel Poles/Day	0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	33.4
Compressor Trailer	120	Diesel	4		8	6		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		6	7.7	1.8	11.2	1.0	0.9	4.5
R/T Crane (L)	350	Diesel	4		8	7		0.3669	0.1175	1.0644	0.0378	0.0348	139.2000	0.0106		7	10.3	3.3	29.8	1.1	1.0	15.6
															Total		**49.7**	**12.3**	**96.0**	**4.2**	**3.8**	**61.8**
															Total (tons)		**0.2**	**0.0**	**0.4**	**0.0**	**0.0**	
Steel Pole Erection -- (13)				**24**	**8**		**36 TSP's**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	8.7	0.2	0.9	0.0	0.0	3.3
3/4-Ton Pick-up Truck, 4×4	300	Diesel	8	8	8	6		2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	40	50	2.5	0.1	0.3	0.0	0.0	2.3
1-Ton Crew Cab Flat Bed, 4×4	300	Diesel	8		8	6		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	6	1.7	0.4	1.8	0.3	0.3	2.8
4000 gallon Water Truck	350	Diesel	4		8	10	5 Steel Poles/Day	0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	33.4
Compressor Trailer	120	Diesel	4		8	6		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		6	7.7	1.8	11.2	1.0	0.9	4.5
R/T Crane (L)	350	Diesel	4		8	7		0.3669	0.1175	1.0644	0.0378	0.0348	139.2000	0.0106		7	10.3	3.3	29.8	1.1	1.0	15.6
															Total		**49.7**	**12.3**	**96.0**	**4.2**	**3.8**	**61.8**
															Total (tons)		**0.2**	**0.0**	**0.4**	**0.0**	**0.0**	
Install Conductor -- (14)				**220**	**24**		**36 Circuit Miles**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	79.6	2.2	8.1	0.1	0.1	89.7
3/4-Ton Pick-up Truck, 4×4	300	Diesel	4	4	24	10		2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	40	50	1.3	0.0	0.1	0.0	0.0	3.4
1-Ton Crew Cab Flat Bed, 4×4	300	Diesel	8		24	10		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	10	2.8	0.6	3.0	0.5	0.5	13.8
Wire Truck/Trailer	350	Diesel	4		17	6		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		6	11.3	3.9	31.2	1.1	1.0	42.6
Dump Truck (Trash)	350	Diesel	2		24	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	9.4	3.2	26.0	0.9	0.8	50.2
R/T Crane (M)	350	Diesel	2		24	10		0.3669	0.1175	1.0644	0.0378	0.0348	139.2000	0.0106		10	7.3	2.3	21.3	0.8	0.7	33.4
Bucket Truck	350	Diesel	4		24	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	100.3
22-Ton Manitex	350	Diesel	4		24	10		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		10	12.3	4.4	43.6	1.4	1.3	65.3
Splicing Rig	350	Diesel	2		7	2	1.6 Miles/Day	0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		2	1.2	0.4	4.4	0.1	0.1	1.9
Splicing Lab	300	Diesel	2		7	2		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		2	1.2	0.4	4.4	0.1	0.1	1.9
Splicing Cart	10	Diesel	4		7	10		0.0391	0.0066	0.0466	0.0018	0.0017	6.4000	0.0006		10	1.6	0.3	1.9	0.1	0.1	0.9
3 Drum Straw line Puller	300	Diesel	2		13	7		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		7	4.3	1.6	15.3	0.5	0.4	12.4
D8 Cat	350	Diesel	1		24	7		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		7	2.2	0.8	7.6	0.2	0.2	11.4
Sag Cat W/ 2 Winches	350	Diesel	1		24	7		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		7	2.2	0.8	7.6	0.2	0.2	11.4
Hughes 500 E Helicopter		Jet A	2		24	7		2.1989	1.7655	1.4214	0.0445	0.0409	763.4927	0.0000		7	30.8	24.7	19.9	0.6	0.6	128.3
Fuel, Helicopter Support Truck	300	Diesel	2		24	7		0.4236	0.1474	1.2027	0.0408	0.0375	188.0000	0.0133		7	5.9	2.1	16.8	0.6	0.5	31.6
Static Truck/ Tensioner	350	Diesel	2		13	6		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		6	5.7	1.9	15.6	0.5	0.5	16.3
															Total		**197.9**	**50.3**	**278.8**	**9.6**	**8.8**	**614.8**
															Total (tons)		**1.3**	**0.4**	**1.8**	**0.1**	**0.1**	
Guard Structure Removal -- (15)				**12**	**1**		**6 Structures**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	4.3	0.1	0.4	0.0	0.0	0.2

3/4-Ton Pick-up Truck, 4×4	300	Diesel	4	4	1	7	17.2 Structures/Day	2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	40	50	1.3	0.0	0.1	0.0	0.0	0.1
1-Ton Crew Cab Flat Bed, 4×4	300	Diesel	4		1	7		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	7	1.0	0.2	1.1	0.2	0.2	0.2
Compressor Trailer	120	Diesel	4		1	7		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		7	9.0	2.1	13.1	1.2	1.1	0.7
Water Truck	350	Diesel	2		1	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	9.4	3.2	26.0	0.9	0.8	2.1
Extendable Flat Bed Pole Truck	350	Diesel	4		1	6		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		6	11.3	3.9	31.2	1.1	1.0	2.5
R/T Crane (M)	500	Diesel	2		1	10		0.4948	0.1468	1.2979	0.0470	0.0432	180.0000	0.0132		10	9.9	2.9	26.0	0.9	0.9	1.8
80ft. Hydraulic Man-lift / Bucket Truck	350	Diesel	2		1	7		0.3637	0.0870	0.9773	0.0354	0.1358	143.9610	0.0079		7	5.1	1.2	13.7	0.5	1.9	1.0
															Total		**51.3**	**13.8**	**111.6**	**4.8**	**5.8**	**8.6**
															Total (tons)		**0.0**	**0.0**	**0.1**	**0.0**	**0.0**	
Restoration -- (16)				**14**	**4**		**8 Miles**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	5.1	0.1	0.5	0.0	0.0	1.0
1-Ton Crew Cab, 4×4	300	Diesel	4		4	2	2.5 Miles/Day	0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	2	0.3	0.1	0.3	0.1	0.0	0.2
Motor Grader	350	Diesel	2		4	6		0.5992	0.1758	1.5242	0.0550	0.0506	229.0000	0.1398		6	7.2	2.1	18.3	0.7	0.6	5.5
Water Truck	350	Diesel	2		4	8		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		8	7.5	2.6	20.8	0.7	0.7	6.7
Backhoe/Front Loader	350	Diesel	2		4	6		0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		6	8.7	2.6	21.9	0.8	0.7	8.3
Drum Type Compactor	250	Diesel	2		4	6		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		6	3.7	1.3	13.1	0.4	0.4	3.3
Track Type Dozer	350	Diesel	2		4	6		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236		6	11.1	3.1	26.3	1.1	1.0	5.2
Lowboy Truck/Trailer	300	Diesel	2		4	3		0.4236	0.1474	1.2027	0.0408	0.0375	188.0000	0.0133		3	2.5	0.9	7.2	0.2	0.2	2.3
															Total		**46.1**	**12.9**	**108.5**	**3.9**	**3.6**	**32.3**
															Total (tons)		**0.1**	**0.0**	**0.2**	**0.0**	**0.0**	
															Grand Total (lb/day)		1104.8	311.0	2362.0	87.8	83.9	
															Grand Total (Tons)		8.7	2.3	17.7	0.7	0.6	3317.7

Transmission Construction Equipment and Workforce Estimates (Segment 5-Alternative)

Work Activity				Activity Production																		
Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs/Day)	Estimated Production Per Day															
Survey -- (1)				**4**	**8**		**10 Miles**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	1.4	0.0	0.1	0.0	0.0	0.5
3/4-Ton Pick-up Truck, 4x4	200	Gas	2		8	8	1.3 Miles/Day	2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	40	50	2.5	0.1	0.3	0.0	0.0	0.0
															Total		**4.0**	**0.1**	**0.4**	**0.0**	**0.0**	**0.5**
															Total (tons)		**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	
Marshaling Yard -- (2)				**1**				3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	0.4	0.0	0.0	0.0	0.0	0.0
1-Ton Crew Cab, 4x4	300	Diesel	1		2	4		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	4	0.1	0.0	0.2	0.0	0.0	0.1
R/T Crane (M)	300	Diesel	1		2	5		0.3243	0.1077	0.9866	0.0348	0.0320	125.6000	0.0097		5	1.6	0.5	4.9	0.2	0.2	0.6
4,000g Water Truck	350	Diesel	1		2	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	4.7	1.6	13.0	0.4	0.4	2.1
Jet A Fuel Truck			1		2	4		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		4	1.9	0.6	5.2	0.2	0.2	0.8
R/T Fork Lift	200	Diesel	1		2	5		0.3311	0.0524	0.3883	0.0214	0.0197	56.1000	0.0047		5	1.7	0.3	1.9	0.1	0.1	0.3
Truck, Semi, Tractor	350	Diesel	1		2	6		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		6	2.8	1.0	7.8	0.3	0.2	1.3
															Total		**13.2**	**4.1**	**33.1**	**1.2**	**1.1**	**5.1**
															Total (tons)		**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	
R/W Clearing -- (3)				**5**	**32**		**10 Miles**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	1.8	0.1	0.2	0.0	0.0	2.7
1-Ton Crew Cab, 4x4	300	Diesel	1		32	10	6.4 Miles/Day	0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	10	0.4	0.1	0.4	0.1	0.1	2.3
Motor Grader	350	Diesel	1		32	7		0.5992	0.1759	1.5242	0.0550	0.0506	229.0000	0.1398		7	4.2	1.2	10.7	0.4	0.4	25.6
Water Truck	350	Diesel	2		32	7		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		7	6.6	2.3	18.2	0.6	0.6	46.8
Backhoe/Front Loader	350	Diesel	1		32	7		0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		7	5.1	1.5	12.8	0.4	0.4	38.6
Track Type Dozer	350	Diesel	1		32	9		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236		9	8.3	2.4	19.8	0.8	0.8	31.1
Lowboy Truck/Trailer	500	Diesel	1		32	5		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236		5	4.6	1.3	11.0	0.5	0.4	17.3
															Total		**31.0**	**8.8**	**73.0**	**2.8**	**2.6**	**164.5**
															Total (tons)		**0.5**	**0.1**	**1.2**	**0.0**	**0.0**	
Roads & Landing Work -- (4)				**10**	**22**		**4.7 Miles & 110 Pads**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	3.6	0.1	0.4	0.0	0.0	3.7
1-Ton Crew Cab, 4x4	300	Diesel	4		22	5	2.5 Miles/Day & 10 Structure Pads/Day	0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	5	0.7	0.2	0.8	0.1	0.1	3.2
Motor Grader	350	Diesel	2		22	5		0.5992	0.1759	1.5242	0.0550	0.0506	229.0000	0.1398		5	6.0	1.8	15.2	0.6	0.5	25.2
Water Truck	350	Diesel	4		22	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	92.0
Backhoe/Front Loader	350	Diesel	2		22	7		0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		7	10.1	3.1	25.6	0.9	0.8	53.1
Drum Type Compactor	250	Diesel	2		22	5		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		5	3.1	1.1	10.9	0.3	0.3	15.0
Track Type Dozer	350	Diesel	2		22	7		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236		7	13.0	3.7	30.7	1.3	1.2	33.2
Excavator	300	Diesel	2		11	7		0.5102	0.1657	1.3127	0.0023	0.0021	174.0000	0.0115		7	7.1	2.3	18.4	0.0	0.0	13.4
Lowboy Truck/Trailer	500	Diesel	2		11	4		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236		4	7.4	2.1	17.6	0.7	0.7	9.5
															Total		**70.4**	**20.9**	**172.7**	**5.8**	**5.3**	**248.3**
															Total (tons)		**0.4**	**0.1**	**0.9**	**0.0**	**0.0**	
Guard Structure Installation -- (5)				**12**	**1**		**6 Structures**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	4.3	0.1	0.4	0.0	0.0	0.2
3/4-Ton Pick-up Truck, 4x4	275	Diesel	4		1	8	12 Structures/Day	2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	40	50	0.3	0.0	0.0	0.0	0.0	0.0
1-Ton Crew Cab Flat Bed, 4x4	300	Diesel	2		1	8		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	8	0.6	0.1	0.6	0.1	0.1	0.1
Compressor Trailer	120	Diesel	2		1	7		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		7	4.5	1.1	6.6	0.6	0.5	0.3
Auger Truck	500	Diesel	2		1	5		0.6134	0.2065	1.5945	0.0567	0.0522	272.0000	0.0186		5	6.1	2.1	15.9	0.6	0.5	1.4
Extendable Flat Bed Pole Truck	350	Diesel	2		1	8		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		8	7.5	2.6	20.8	0.7	0.7	1.7
R/T Crane (M)	500	Diesel	2		1	8		0.4948	0.1468	1.2979	0.0470	0.0432	180.0000	0.0132		8	7.9	2.3	20.8	0.8	0.7	1.4
Water Truck	350	Diesel	4		1	8		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		8	15.1	5.2	41.6	1.4	1.3	3.3
Man-lift/Bucket Truck	350	Diesel	2		1	8		0.3637	0.0870	0.9773	0.0354	0.0326	143.9610	0.0079		8	5.8	1.4	15.6	0.6	0.5	1.2
															Total		**52.8**	**15.0**	**123.4**	**4.8**	**4.4**	**9.6**
															Total (tons)		**0.0**	**0.0**	**0.1**	**0.0**	**0.0**	
Install LST Foundations -- (6)				**28**	**24**		**74 LST's**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	10.1	0.3	1.0	0.0	0.0	11.4

3/4-Ton Pick-up Truck, 4x4	275	Diesel	4		24	5	3.2 LSTs/Day	2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	40	50	7.6	0.3	0.8	0.0	0.0	0.0
1-Ton Crew Cab Flat Bed, 4x4	300	Diesel	8		24	5		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	5	1.4	0.3	1.5	0.3	0.2	6.9
Backhoe/Front Loader	200	Diesel	4		24	10		0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		10	29.0	8.7	73.0	2.5	2.3	165.6
Auger Truck	500	Diesel	4		24	10		0.6134	0.2065	1.5945	0.0567	0.0522	272.0000	0.0186		10	24.5	8.3	63.8	2.3	2.1	130.6
Dump Truck	350	Diesel	8		24	10		0.4710	0.1622	1.3002	0.0448	0.0412	209.0000	0.0146		10	37.7	13.0	104.1	3.6	3.3	200.6
4000 gallon Water Truck	350	Diesel	4		24	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	100.3
Concrete Mixer Truck	425	Diesel	12		24	7		0.6064	0.2032	1.8639	0.0630	0.0580	265.0000	0.0183		7	50.9	17.1	156.6	5.3	4.9	267.1
															Total		**180.1**	**54.4**	**452.9**	**15.7**	**14.5**	**882.3**
															Total (tons)		**2.2**	**0.7**	**5.4**	**0.2**	**0.2**	
LST Steel Haul – (7)				**3**	**30**		**74 LST's**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	2.9	0.1	0.3	0.0	0.0	4.1
1-Ton Crew Cab Flat Bed, 4x4	300	Diesel	4		30	10	2.5 LSTs/Day	0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	10	1.4	0.3	1.5	0.3	0.2	8.6
Water Truck	350	Diesel	2		30	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	9.4	3.2	26.0	0.9	0.8	62.7
Flat Bed Truck/Trailer	350	Diesel	2		30	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	9.4	3.2	26.0	0.9	0.8	62.7
Rough Terrain Fork Lift	200	Diesel	2		30	8		0.3311	0.0524	0.3883	0.0214	0.0197	56.1000	0.0047		8	5.3	0.8	6.2	0.3	0.3	13.5
															Total		**30.6**	**8.4**	**85.5**	**2.8**	**2.4**	**151.6**
															Total (tons)		**0.5**	**0.1**	**1.0**	**0.0**	**0.0**	
LST Steel Assembly – (8)				**40**	**56**		**74 LST's**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	14.5	0.4	1.5	0.0	0.0	38.1
3/4-Ton Pick-up Truck, 4x4	300	Diesel	4		56	5	1.4 LSTs/Day	2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	40	50	17.6	0.6	1.9	0.0	0.0	0.0
1-Ton Crew Cab Flat Bed, 4x4	300	Diesel	6		56	5		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	5	1.1	0.2	1.1	0.2	0.2	12.1
Rough Terrain Fork Lift	200	Diesel	4		56	7		0.3311	0.0524	0.3883	0.0214	0.0197	56.1000	0.0047		7	9.3	1.5	10.9	0.6	0.6	44.0
R/T Crane (L)	300	Diesel	4		56	10		0.3243	0.1077	0.9866	0.0348	0.0320	125.6000	0.0097		10	13.0	4.3	39.5	1.4	1.3	140.7
Compressor Trailer	120	Diesel	4		56	7		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		7	9.0	2.1	13.1	1.2	1.1	36.8
															Total		**64.9**	**9.3**	**69.0**	**3.4**	**3.2**	**271.6**
															Total (tons)		**1.8**	**0.3**	**1.9**	**0.1**	**0.1**	
LST Erection – (9)				**48**	**39**		**74 LST's**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	17.4	0.5	1.8	0.0	0.0	31.8
3/4-Ton Pick-up Truck, 4x4	300	Diesel	8		39	5	2 LSTs/Day	2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	40	50	12.3	0.4	1.4	0.0	0.0	0.0
1-Ton Crew Cab Flat Bed, 4x4	300	Diesel	8		39	5		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	5	1.4	0.3	1.5	0.3	0.2	11.2
Water Truck	350	Diesel	2		39	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	9.4	3.2	26.0	0.9	0.8	81.5
R/T Crane (M)	500	Diesel	4		39	7		0.4948	0.1468	1.2979	0.0470	0.0432	180.0000	0.0132		7	13.9	4.1	36.3	1.3	1.2	98.3
Compressor Trailer	120	Diesel	4		39	7		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		7	9.0	2.1	13.1	1.2	1.1	25.6
R/T Crane (L)	350	Diesel	4		39	7		0.3669	0.1175	1.0644	0.0378	0.0348	139.2000	0.0106		7	10.3	3.3	29.8	1.1	1.0	76.0
															Total		**25.4**	**14.3**	**111.8**	**4.8**	**4.4**	**324.4**
															Total (tons)		**1.5**	**0.3**	**2.2**	**0.1**	**0.1**	
Install Tubular Steel Pole Foundations – (10)				**24**	**18**		**36 TSP's**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	8.7	0.2	0.9	0.0	0.0	6.1
1-Ton Crew Cab Flat Bed, 4x4	300	Diesel	12		15	5	2.5 TSPs/Day	0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	5	2.1	0.5	2.3	0.4	0.4	6.5
R/T Crane (M)	300	Diesel	4		15	7		0.3243	0.1077	0.9866	0.0348	0.0320	125.6000	0.0097		7	9.1	3.0	27.6	1.0	0.9	26.4
Backhoe/Front Loader	200	Diesel	4		15	10		0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		10	29.0	8.7	73.0	2.5	2.3	103.5
Auger Truck	500	Diesel	4		11	10		0.6134	0.2065	1.5945	0.0567	0.0522	272.0000	0.0186		10	24.5	8.3	63.8	2.3	2.1	59.8
4000 gallon Water Truck	350	Diesel	4		15	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	62.7
Dump Truck	350	Diesel	8		15	10		0.4710	0.1622	1.3002	0.0448	0.0412	209.0000	0.0146		10	37.7	13.0	104.1	3.6	3.3	125.4
Concrete Mixer Truck	425	Diesel	12		11	6		0.5422	0.1843	1.4476	0.0507	0.0467	240.5000	0.0166		6	39.0	13.3	104.2	3.7	3.4	95.2
															Total		**170.4**	**53.7**	**430.1**	**15.3**	**14.0**	**485.6**
															Total (tons)		**0.9**	**0.3**	**2.4**	**0.1**	**0.1**	
Steel Pole Haul – (11)				**8**	**4**		**36 TSP's**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	2.9	0.1	0.3	0.0	0.0	0.5
3/4-Ton Pick-up Truck, 4x4	300	Diesel	4		4	8	10 Steel Poles/Day	2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	40	50	1.3	0.0	0.1	0.0	0.0	0.0
4000 gallon Water Truck	350	Diesel	4		4	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	16.7
R/T Crane (M)	350	Diesel	2		4	6		0.3669	0.1175	1.0644	0.0378	0.0348	139.2000	0.0106		6	4.4	1.4	12.8	0.5	0.4	3.3
40' Flat Bed Truck/ Trailer	400	Diesel	4		4	10		0.5185	0.1769	1.3986	0.0487	0.0448	230.0000	0.0160		10	20.7	7.1	55.9	1.9	1.8	18.4
															Total		**49.1**	**15.4**	**123.5**	**4.3**	**3.9**	**39.0**
															Total (tons)		**0.1**	**0.0**	**0.2**	**0.0**	**0.0**	
Steel Pole Assembly – (12)				**24**	**8**		**36 TSP's**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	8.7	0.2	0.9	0.0	0.0	3.3
3/4-Ton Pick-up Truck, 4x4	300	Diesel	8		8	6	5 Steel Poles/Day	2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	40	50	2.5	0.1	0.3	0.0	0.0	0.0
1-Ton Crew Cab Flat Bed, 4x4	300	Diesel	8		8	6		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	6	1.7	0.4	1.8	0.3	0.3	2.8
4000 gallon Water Truck	350	Diesel	4		8	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	33.4
Compressor Trailer	120	Diesel	4		8	6		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		6	7.7	1.8	11.2	1.0	0.9	4.5
R/T Crane (L)	350	Diesel	4		8	7		0.3669	0.1175	1.0644	0.0378	0.0348	139.2000	0.0106		7	10.3	3.3	29.8	1.1	1.0	15.6
															Total		**49.8**	**12.3**	**96.3**	**4.2**	**3.8**	**59.6**
															Total (tons)		**0.2**	**0.0**	**0.4**	**0.0**	**0.0**	
Steel Pole Erection – (13)				**24**	**8**		**36 TSP's**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	8.7	0.2	0.9	0.0	0.0	3.3
3/4-Ton Pick-up Truck, 4x4	300	Diesel	8		8	6	5 Steel Poles/Day	2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	40	50	2.5	0.1	0.3	0.0	0.0	0.0
1-Ton Crew Cab Flat Bed, 4x4	300	Diesel	8		8	6		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	6	1.2	0.4	1.8	0.3	0.3	2.8
4000 gallon Water Truck	350	Diesel	4		8	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	33.4
Compressor Trailer	120	Diesel	4		8	6		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		6	7.7	1.8	11.2	1.0	0.9	4.5
R/T Crane (L)	350	Diesel	4		8	7		0.3669	0.1175	1.0644	0.0378	0.0348	139.2000	0.0106		7	10.3	3.3	29.8	1.1	1.0	15.6
															Total		**49.0**	**12.3**	**96.4**	**4.2**	**3.9**	**59.8**
															Total (tons)		**0.2**	**0.0**	**0.4**	**0.0**	**0.0**	
Install Conductor – (14)				**120**	**27**		**40 Circuit Miles**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	79.6	2.2	8.1	0.1	0.1	100.9
3/4-Ton Pick-up Truck, 4x4	300	Diesel	4		27	10		2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	40	50	8.5	0.3	0.9	0.0	0.0	0.0
1-Ton Crew Cab Flat Bed, 4x4	300	Diesel	8		27	10		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	40	50	2.4	0.5	2.5	0.4	0.4	0.0
Wire Truck/Trailer	350	Diesel	6		19	6		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		6	11.3	3.9	31.2	1.1	1.0	47.7
Dump Truck (Trash)	350	Diesel	2		27	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	9.4	3.2	26.0	0.9	0.8	56.4
R/T Crane (M)	350	Diesel	2		19	10		0.3669	0.1175	1.0644	0.0378	0.0348	139.2000	0.0106		10	7.3	2.3	21.3	0.8	0.7	26.4

Bucket Truck	350	Diesel	4		19	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	79.4
22-Ton Manitex	350	Diesel	4		19	10		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		10	12.3	4.4	43.6	1.4	1.3	51.7
Splicing Rig	350	Diesel	2		8	2	1.6 Miles/Day	0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		2	1.2	0.4	4.4	0.1	0.1	2.2
Splicing Lab	300	Diesel	2		8	2		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		2	1.2	0.4	4.4	0.1	0.1	2.2
Splicing Cart	10	Diesel	4		8	10		0.0391	0.0066	0.0466	0.0018	0.0017	6.4000	0.0006		10	1.6	0.3	1.9	0.1	0.1	1.0
3 Drum Straw line Puller	300	Diesel	2		15	7		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		7	4.3	1.6	15.3	0.5	0.4	14.3
D8 Cat	350	Diesel	1		19	7		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		7	2.2	0.8	7.6	0.2	0.2	9.0
Sag Cat W/2 Winches	350	Diesel	1		15	7		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		7	2.2	0.8	7.6	0.2	0.2	7.1
Hughes 500 E Helicopter		Jet A	2		8	7		2.1989	1.7655	1.4214	0.0445	0.0409	763.4927	0.0000		7	30.8	24.7	19.9	0.6	0.6	42.8
Fuel, Helicopter Support Truck	300	Diesel	2		8	7		0.4236	0.1474	1.2027	0.0408	0.0375	188.0000	0.0133		7	5.9	2.1	16.8	0.6	0.5	10.5
Static Truck/ Tensioner	350	Diesel	2		15	6		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		6	5.7	1.9	15.6	0.5	0.5	18.8
															Total		**204.9**	**56.5**	**279.5**	**9.5**	**8.7**	**470.5**
															Total (tons)		**1.5**	**0.4**	**2.1**	**0.1**	**0.1**	
Guard Structure Removal -- (15)				**12**	**1**		**6 Structures**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	4.3	0.1	0.4	0.0	0.0	0.2
3/4-Ton Pick-up Truck, 4x4	300	Diesel	4		1	7		2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	40	50	0.3	0.0	0.0	0.0	0.0	0.0
1-Ton Crew Cab Flat Bed, 4x4	300	Diesel	4		1	7		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	40	50	0.1	0.0	0.1	0.0	0.0	0.0
Compressor Trailer	120	Diesel	4		1	7		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		7	8.0	2.1	13.1	1.2	1.1	0.7
Water Truck	350	Diesel	2		1	10	17.2 Structures/Day	0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	9.4	3.2	26.0	0.9	0.8	2.1
Extendable Flat Bed Pole Truck	350	Diesel	4		1	6		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		6	11.3	3.9	31.2	1.1	1.0	2.5
R/T Crane (M)	500	Diesel	2		1	10		0.4948	0.1468	1.2979	0.0470	0.0432	180.0000	0.0132		10	9.9	2.9	26.0	0.9	0.9	1.8
80ft. Hydraulic Man-lift / Bucket Truck	350	Diesel	2		1	7		0.3637	0.0870	0.9773	0.0354	0.1358	143.9610	0.0079		7	5.1	1.2	13.7	0.5	1.9	1.0
															Total		**51.0**	**14.0**	**112.6**	**4.7**	**5.7**	**8.3**
															Total (tons)		**0.0**	**0.0**	**0.1**	**0.0**	**0.0**	
Restoration -- (16)				**14**	**4**		**10 Miles**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	5.1	0.1	0.5	0.0	0.0	1.0
1-Ton Crew Cab, 4x4	300	Diesel	4		4	2		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	40	50	0.4	0.1	0.4	0.1	0.1	0.0
Motor Grader	350	Diesel	2		4	6		0.5992	0.1759	1.5242	0.0550	0.0506	229.0000	0.1398		6	7.2	2.1	18.3	0.7	0.6	5.5
Water Truck	350	Diesel	2		4	8		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		8	7.5	2.6	20.8	0.7	0.7	6.7
Backhoe/Front Loader	350	Diesel	2		4	6	2.5 Miles/Day	0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		6	8.7	2.6	21.9	0.8	0.7	8.3
Drum Type Compactor	250	Diesel	2		4	6		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		6	3.7	1.3	13.1	0.4	0.4	3.3
Track Type Dozer	350	Diesel	2		4	6		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236		6	11.1	3.1	26.3	1.1	1.0	5.2
Lowboy Truck/Trailer	300	Diesel	2		4	3		0.4236	0.1474	1.2027	0.0408	0.0375	188.0000	0.0133		3	2.5	0.9	7.2	0.2	0.2	2.3
															Total		**46.2**	**12.8**	**108.6**	**4.0**	**3.6**	**32.1**
															Total (tons)		**0.1**	**0.0**	**0.2**	**0.0**	**0.0**	
															Grand Total (lb/day)		1143.5	312.5	2348.8	87.2	81.7	
															Grand Total (Tons)		9.9	2.5	18.5	0.7	0.6	3212.7

Transmission and Subtransmission Construction Equipment and Workforce Estimates

Transmission (Segment 6) Construction Equipment and Workforce Estimates

Work Activity				Activity Production				EMFAC2011 Diesel Emission Factors (gms/mi) or OFFROAD Diesel Emissions Factors (lb/hr)							Average Speed (mph)	Miles per day or Hours per day	Estimated Emissions					
Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs/Day)	Estimated Production Per Day	CO	ROG	NO_X	PM_{10}	$PM_{2.5}$	CO_2	CH_4			CO (lbs/day)	ROG (lbs/day)	NO_X (lbs/day)	PM_{10} (lbs/day)	$PM_{2.5}$ (lbs/day)	CO_2e (MT/yr)
Survey – (1)				**4**	**6**		**8**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	1.4	0.0	0.1	0.0	0.0	0.4
3/4 Ton Pick up Truck, 4x4	200	Gas	2		6	8	1.3 Miles/Day	2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	20	8	2.0	0.1	0.2	0.0	0.0	1.4
															Total		**3.5**	**0.1**	**0.4**	**0.0**	**0.0**	**1.8**
															Total (tons)		**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	
Marshaling Yard – (2)				**4**				3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	1.4	0.0	0.1	0.0	0.0	0.0
1-Ton Crew Cab, 4x4	300	Diesel	1		2	4		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	4	0.1	0.0	0.2	0.0	0.0	0.1
R/T Crane (M)	300	Diesel	1		2	5		0.3243	0.1077	0.9866	0.0348	0.0320	125.6000	0.0097		5	1.6	0.5	4.9	0.2	0.2	0.6
R/T Forklift	200	Diesel	1		2	5		0.3311	0.0524	0.3883	0.0214	0.0197	56.1000	0.0047		5	1.7	0.3	1.9	0.1	0.1	0.3
Water Truck	300	Diesel	1		2	10		0.4236	0.1474	1.2027	0.0408	0.0375	188.0000	0.0133		10	4.2	1.5	12.0	0.4	0.4	1.9
Jet A Fuel Truck			1		2	4		0.6148	0.2034	1.6679	0.0579	0.0533	260.0000	0.0183		4	2.5	0.8	6.7	0.2	0.2	1.0
Truck, Semi, Tractor	350	Diesel	1		2	6		0.5063	0.1560	1.3478	0.0449	0.0413	241.2000	0.0141		6	3.0	0.9	8.1	0.3	0.2	1.4
															Total		**14.6**	**4.1**	**34.0**	**1.2**	**1.1**	**5.8**
															Total (tons)		**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	
R/W Clearing – (3)				**5**	**28**		**8 Miles**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	1.8	0.1	0.2	0.0	0.0	2.2
1-Ton Crew Cab, 4x4	300	Diesel	1		26	10	0.4 Miles/Day	0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	10	0.4	0.1	0.4	0.1	0.1	1.9
Motor Grader	350	Diesel	1		26	7		0.5992	0.1759	1.5242	0.0550	0.0506	229.0000	0.1398		7	4.2	1.2	10.7	0.4	0.4	20.8
Water Truck	350	Diesel	2		26	7		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		7	6.6	2.3	18.2	0.6	0.6	38.0
Backhoe/Front Loader	350	Diesel	1		26	7		0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		7	5.1	1.5	12.8	0.4	0.4	31.4
Track Type Dozer	350	Diesel	1		26	9		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236		9	8.3	2.4	19.8	0.8	0.8	25.2
Lowboy Truck/Trailer	500	Diesel	1		26	5		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236		5	4.6	1.3	11.0	0.5	0.4	14.0
															Total		**31.0**	**8.8**	**72.8**	**2.8**	**2.6**	**133.6**
															Total (tons)		**0.4**	**0.1**	**0.9**	**0.0**	**0.0**	
Roads & Landing Work – (4)				**10**	**25**		**31.7 Miles & 97 Pads**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	3.6	0.1	0.4	0.0	0.0	4.2
1-Ton Crew Cab, 4x4	300	Diesel	4		25	5	1.3 Miles/Day & 5 Structure Pads/Day	0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	5	0.7	0.2	0.8	0.1	0.1	3.6
Motor Grader	350	Diesel	2		25	5		0.5992	0.1759	1.5242	0.0550	0.0506	229.0000	0.1398		5	6.0	1.8	15.2	0.6	0.5	28.6
Water Truck	350	Diesel	4		25	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	104.5
Backhoe/Front Loader	350	Diesel	2		25	7		0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		7	10.1	3.1	25.6	0.9	0.8	60.4
Drum Type Compactor	250	Diesel	2		25	5		0.3595	0.1207	1.1333	0.0429	0.0395	122.2913	0.0109		5	3.6	1.2	11.3	0.4	0.4	15.3
Track Type Dozer	350	Diesel	2		25	7		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236		7	13.0	3.7	30.7	1.3	1.2	37.8
Excavator	300	Diesel	2		13	7		0.5102	0.1657	1.3127	0.0023	0.0021	174.0000	0.0115		7	7.1	2.3	18.4	0.0	0.0	15.8
Lowboy Truck/Trailer	500	Diesel	2		13	4		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236		4	7.4	2.1	17.6	0.7	0.7	11.2
															Total		**70.4**	**20.9**	**171.9**	**5.8**	**5.4**	**281.4**
															Total (tons)		**0.5**	**0.1**	**1.1**	**0.0**	**0.0**	
Guard Structure Installation – (5)				**12**	**12**		**158 Structures**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	4.3	0.1	0.4	0.0	0.0	2.4
3/4-Ton Pick-up Truck, 4x4	300	Diesel	4	4	12	8	12 Structures/Day	2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	40	50	1.3	0.0	0.1	0.0	0.0	1.7
1-Ton Crew Cab Flat Bed, 4x4	300	Diesel	2		12	8		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	8	0.6	0.1	0.6	0.1	0.1	1.4
Compressor Trailer	120	Diesel	2		12	7		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		7	4.5	1.1	6.6	0.6	0.5	3.9
Auger Truck	500	Diesel	2		12	5		0.6134	0.2065	1.5945	0.0567	0.0522	272.0000	0.0186		5	6.1	2.1	15.9	0.6	0.5	16.3
Extendable Flat Bed Pole Truck	350	Diesel	2		12	8		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		8	7.5	2.6	20.8	0.7	0.7	20.1
R/T Crane (M)	500	Diesel	2		12	8		0.4948	0.1468	1.2979	0.0470	0.0432	180.0000	0.0132		8	7.9	2.3	20.8	0.8	0.7	17.3
Water Truck	350	Diesel	1		12	8		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		8	3.8	1.3	10.4	0.4	0.3	10.0
Extendable Flat Bed Pole Truck	350	Diesel	2		12	8		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		8	7.5	2.6	20.8	0.7	0.7	20.1
															Total		**43.6**	**12.3**	**96.5**	**3.8**	**3.5**	**93.2**
															Total (tons)		**0.3**	**0.1**	**0.6**	**0.0**	**0.0**	
Remove Existing Conductor & OHGW – (6)				**56**	**97**		**161 Circuit Miles**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	20.3	0.6	2.1	0.0	0.0	92.3
1-Ton Crew Cab, 4x4	300	Diesel	16		97	10	1.7 Miles/Day	0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0640	20	10	5.6	1.2	6.0	1.0	1.0	111.4
Man-lift / Bucket Truck	350	Diesel	12		97	10		0.3637	0.0870	0.9773	0.0354	0.0326	143.9610	0.0079		10	43.6	10.4	117.3	4.3	3.9	837.9
Sleeving Truck	300	Diesel	4		97	5		0.4236	0.1474	1.2027	0.0408	0.0375	188.0000	0.0133		5	8.5	2.9	24.1	0.8	0.8	182.4
R/T Crane (M)	300	Diesel	4	4	97	5		0.3243	0.1077	0.9866	0.0348	0.0320	125.6000	0.0097		5	6.5	2.2	19.7	0.7	0.6	121.8
Flat Bed Trailer	N/A	N/A	12		88	3		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		3	0.0	0.0	0.0	0.0	0.0	0.0
Truck, Semi, Tractor	350	Diesel	4		88	3		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		3	5.7	1.9	15.6	0.5	0.5	110.4
Bull Wheel Puller	500	Diesel	4		66	5		0.6064	0.2032	1.8639	0.0630	0.0580	265.0000	0.0183		5	12.1	4.1	37.3	1.3	1.2	174.9
Water Truck	350	Diesel	4		66	6		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		6	11.3	3.9	31.2	1.1	1.0	165.5
Hydraulic Rewind Puller	300	Diesel	4		66	5		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		5	6.2	2.2	21.8	0.7	0.6	89.8
															Total		**119.7**	**29.5**	**275.1**	**10.4**	**9.6**	**1886.3**
															Total (tons)		**4.0**	**1.0**	**9.1**	**0.3**	**0.3**	
Remove Existing Lattice Steel Towers – (7)				**12**	**36**		**80 Towers**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	11.6	0.3	1.2	0.0	0.0	19.6
1-Ton Crew Cab, 4x4	300	Diesel	8		36	8		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	8	2.3	0.5	2.4	0.4	0.4	16.5

R/T Crane (M)	215	Diesel	8		36	5	2.5 Towers/Day	0.3745	0.0978	0.8256	0.0361	0.0332	97.2000	0.0088		5	15.0	3.9	33.0	1.4	1.3	70.0
Compressor Trailer	120	Diesel	8		36	10		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		10	25.7	6.1	37.5	3.3	3.1	67.6
Flat Bed Truck/Trailer	350	Diesel	4		36	8		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		8	15.1	5.2	41.6	1.4	1.3	120.4
Water Truck	350	Diesel	4		36	6		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		6	11.3	3.9	31.2	1.1	1.0	90.3
															Total		**80.9**	**19.9**	**146.9**	**7.7**	**7.1**	**384.4**
															Total (tons)		**1.5**	**0.4**	**2.6**	**0.1**	**0.1**	
Remove Existing Foundations -- (8)				**16**	**36**		**89 Towers**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	5.8	0.2	0.6	0.0	0.0	9.8
1-Ton Crew Cab Flat Bed, 4×4	300	Diesel	4		36	10	2.5 Towers/Day	0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	10	1.4	0.3	1.5	0.3	0.2	10.3
Dump Truck	350	Diesel	4		36	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	150.5
Backhoe/Front Loader	350	Diesel	4		36	10		0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		10	29.0	8.7	73.0	2.5	2.3	248.4
Water Truck	350	Diesel	4		36	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	150.5
															Total		**73.9**	**22.2**	**179.2**	**6.4**	**5.8**	**569.5**
															Total (tons)		**1.3**	**0.4**	**3.2**	**0.1**	**0.1**	
Remove Existing Tubular Steel Poles -- (9)				**24**	**2**		**1 TSP**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	8.7	0.2	0.9	0.0	0.0	0.8
3/4-Ton Pick-up Truck, 4×4	300	Diesel	8		2	8	3.8 Steel Poles/Day	2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090		8	182.8	6.6	20.1	0.3	0.3	41.5
R/T Crane (M)	300	Diesel	4		2	5		0.3243	0.1077	0.9866	0.0348	0.0320	125.6000	0.0097		5	6.5	2.2	19.7	0.7	0.6	2.5
Compressor Trailer	120	Diesel	4		2	10		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		10	12.9	3.0	18.7	1.7	1.5	1.9
Water Truck	350	Diesel	4		7	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	8.4
															Total		**229.7**	**18.5**	**111.5**	**4.4**	**4.1**	**55.1**
															Total (tons)		**0.2**	**0.0**	**0.1**	**0.0**	**0.0**	
Install LST Foundations -- (10)				**28**	**30**		**94 LST's**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	10.1	0.3	1.0	0.0	0.0	14.3
1-Ton Crew Cab Flat Bed, 4×4	300	Diesel	8		30	5	3.2 LSTs/Day	0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	5	1.4	0.3	1.5	0.3	0.2	8.6
R/T Crane (M)	300	Diesel	4		30	7		0.3243	0.1077	0.9866	0.0348	0.0320	125.6000	0.0097		7	9.1	3.0	27.6	1.0	0.9	52.8
Backhoe/Front Loader	200	Diesel	4		30	10		0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		10	29.0	8.7	73.0	2.5	2.3	207.0
Auger Truck	500	Diesel	4		30	10		0.6134	0.2065	1.5945	0.0567	0.0522	272.0000	0.0186		10	24.5	8.3	63.8	2.3	2.1	163.2
10-cu. yd. Dump Truck	350	Diesel	8		30	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	37.7	13.0	104.1	3.6	3.3	250.8
Kaman K-MAX		Jet A	1		30	7		1.3532	1.1287	7.4027	0.2005	0.1845	1930.3207	0.0000		7	9.5	7.9	51.8	1.4	1.3	202.7
4000 gallon Water Truck	350	Diesel	4		30	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	125.4
10-cu. yd. Concrete Mixer Truck	425	Diesel	12		30	7		0.5472	0.1843	1.4476	0.0507	0.0467	240.5000	0.0166		7	45.5	15.5	121.6	4.3	3.9	303.0
															Total		**185.7**	**63.5**	**496.5**	**17.1**	**15.7**	**1327.7**
															Total (tons)		**2.8**	**1.0**	**7.4**	**0.3**	**0.2**	
LST Steel Haul -- (11)				**8**	**38**		**94 LST's**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	2.9	0.1	0.3	0.0	0.0	5.2
1-Ton Crew Cab Flat Bed, 4×4	300	Diesel	4		38	10	2.5 LSTs/Day	0.7994	0.1746	0.8563	0.1476	0.1358	375.6138	0.0649	20	10	1.4	0.3	1.5	0.3	0.2	10.9
Truck/Trailer	400	Diesel	4		38	10		0.5185	0.1769	1.3986	0.0487	0.0448	230.0000	0.0160		10	20.7	7.1	55.9	1.9	1.8	174.8
Bell 212		Jet A	2		22	7		1.2590	1.0558	9.3516	0.2472	0.2275	2198.7342	0.0000		7	17.6	14.8	130.9	3.5	3.2	338.6
4000 gallon Water Truck	350	Diesel	4		38	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	158.8
R/T Forklift	200	Diesel	2		38	6		0.3311	0.0524	0.3883	0.0214	0.0197	56.1000	0.0047		6	4.0	0.6	4.7	0.3	0.2	12.8
															Total		**65.5**	**29.4**	**245.4**	**7.7**	**7.1**	**701.1**
															Total (tons)		**1.2**	**0.6**	**4.7**	**0.1**	**0.1**	
LST Steel Assembly -- (12)				**40**	**71**		**94 LST's**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	14.5	0.4	1.5	0.0	0.0	48.2
3/4-Ton Pick-up Truck, 4×4	300	Diesel	4		71	5	1.4 LSTs/Day	2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	20	5	2.5	0.1	0.3	0.0	0.0	20.3
1-Ton Crew Cab Flat Bed, 4×4	300	Diesel	6		71	5		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	5	1.1	0.2	1.1	0.2	0.2	15.3
R/T Forklift	125	Diesel	4		71	7		0.2158	0.0390	0.2571	0.0206	0.0190	31.2000	0.0035		7	6.0	1.1	7.2	0.6	0.5	31.0
R/T Crane (L)	300	Diesel	4		71	10		0.3243	0.1077	0.9866	0.0348	0.0320	125.6000	0.0097		10	13.0	4.3	39.5	1.4	1.3	178.4
Kaman K-MAX		Jet A	1		71	7		1.3537	1.1287	7.4027	0.2005	0.1845	1930.3207	0.0000		7	9.5	7.9	51.8	1.4	1.3	479.7
Compressor Trailer	120	Diesel	4		71	6		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		6	7.7	1.8	11.2	1.0	0.9	40.0
															Total		**54.2**	**15.8**	**112.6**	**4.8**	**4.2**	**812.9**
															Total (tons)		**1.9**	**0.6**	**4.0**	**0.2**	**0.1**	
LST Erection -- (13)				**48**	**49**		**94 LST's**	3.2811	0.0923	0.3335	0.0038	0.0035	308.7209	0.0518	40	50	17.4	0.5	1.8	0.0	0.0	40.0
3/4-Ton Pick-up Truck, 4×4	300	Diesel	8		49	8	2 LSTs/Day	2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	20	8	8.1	0.3	0.9	0.0	0.0	44.8
1-Ton Crew Cab Flat Bed, 4×4	300	Diesel	8		49	8		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	8	2.3	0.5	2.4	0.4	0.4	22.5
4000 gallon Water Truck	350	Diesel	4		49	10		0.4710	0.1622	1.3007	0.0446	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	204.8
R/T Crane (M)	215	Diesel	4		49	7		0.3745	0.0978	0.8256	0.0361	0.0332	97.2000	0.0088		7	10.5	2.7	23.1	1.0	0.9	66.7
R/T Crane (L)	350	Diesel	4		49	7		0.3669	0.1175	1.0644	0.0378	0.0348	139.2000	0.0106		7	10.3	3.3	29.8	1.1	1.0	95.5
															Total		**67.3**	**13.8**	**110.0**	**4.3**	**4.0**	**474.3**
															Total (tons)		**1.6**	**0.3**	**2.7**	**0.1**	**0.1**	
Install Tubular Steel Pole Foundations -- (14)				**24**	**1**		**1 TSP's**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	8.7	0.2	0.9	0.0	0.0	0.4
1-Ton Crew Cab Flat Bed, 4×4	300	Diesel	12		1	5	2.5 TSPs/Day	0.7994	0.1746	0.8563	0.1476	0.1358	375.6138	0.0649	20	5	2.1	0.5	2.3	0.4	0.4	0.4
R/T Crane (M)	300	Diesel	4		1	7		0.3243	0.1077	0.9866	0.0348	0.0320	125.6000	0.0097		7	9.1	3.0	27.6	1.0	0.9	1.6
Backhoe/Front Loader	200	Diesel	4		1	10		0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		10	29.0	8.7	73.0	2.5	2.3	6.9
Auger Truck	500	Diesel	4		1	10		0.6134	0.2065	1.5945	0.0567	0.0522	272.0000	0.0186		10	24.5	8.3	63.8	2.3	2.1	5.4
4000 gallon Water Truck	350	Diesel	4		1	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	4.2
10-cu. yd. Dump Truck	350	Diesel	8		1	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	37.7	13.0	104.1	3.6	3.3	8.4
10-cu. yd. Concrete Mixer Truck	425	Diesel	12		1	6		0.6064	0.2032	1.8639	0.0630	0.0580	265.0000	0.0183		6	43.7	14.6	134.2	4.5	4.2	9.5
															Total		**173.6**	**54.8**	**457.6**	**16.1**	**14.8**	**37.0**
															Total (tons)		**0.1**	**0.0**	**0.2**	**0.0**	**0.0**	
Steel Pole Haul -- (15)				**8**	**1**		**1 TSP's**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	2.9	0.1	0.3	0.0	0.0	0.1
3/4-Ton Pick-up Truck, 4×4	300	Diesel	4		1	8	10 Steel Poles/Day	2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	20	8	4.0	0.1	0.4	0.0	0.0	0.5
4000 gallon Water Truck	350	Diesel	4		1	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	4.2
R/T Crane (L)	350	Diesel	2		1	10		0.3669	0.1175	1.0644	0.0378	0.0348	139.2000	0.0106		10	7.3	2.3	21.3	0.8	0.7	1.4
40' Flat Bed Truck/ Trailer	350	Diesel	4		1	8		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		8	15.1	5.2	41.6	1.4	1.3	3.3
															Total		**48.2**	**14.3**	**115.7**	**4.0**	**3.7**	**9.5**
															Total (tons)		**0.0**	**0.0**	**0.1**	**0.0**	**0.0**	

Steel Pole Assembly -- (16)				**24**		**1**		**1 TSP's**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	8.7	0.2	0.9	0.0	0.0	0.4
3/4-Ton Pick-up Truck, 4x4	300	Diesel	8			1	8		2.6566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090		8	182.8	6.6	20.1	0.3	0.3	20.7
4000 gallon Water Truck	350	Diesel	4			1	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	4.2
1-Ton Crew Cab Flat Bed, 4x4	300	Diesel	8			1	6	5 Steel Poles/Day	0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	6	1.7	0.4	1.8	0.3	0.3	0.3
Compressor Trailer	120	Diesel	4			1	6		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		6	7.7	1.8	11.2	1.0	0.9	0.6
R/T Crane (L)	350	Diesel	4			1	6		0.3669	0.1175	1.0644	0.0378	0.0348	139.2000	0.0106		6	8.8	2.8	25.5	0.9	0.8	1.7
																Total		**228.6**	**18.4**	**111.6**	**4.3**	**3.9**	**27.9**
																Total (tons)		**0.1**	**0.0**	**0.1**	**0.0**	**0.0**	
Steel Pole Erection -- (17)				**24**		**1**		**1 TSP's**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	8.7	0.2	0.9	0.0	0.0	0.4
3/4-Ton Pick-up Truck, 4x4	300	Diesel	8			1	5		2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090		5	114.3	4.1	12.6	0.2	0.2	13.0
1-Ton Crew Cab Flat Bed, 4x4	300	Diesel	8			1	5		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	5	1.4	0.3	1.5	0.3	0.2	0.3
4000 gallon Water Truck	350	Diesel	4			1	10	5 Steel Poles/Day	0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	4.2
Compressor Trailer	120	Diesel	4			1	5		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		5	6.4	1.5	9.4	0.8	0.8	0.5
R/T Crane (L)	350	Diesel	4			1	6		0.3669	0.1175	1.0644	0.0378	0.0348	139.2000	0.0106		6	8.8	2.8	25.5	0.9	0.8	1.7
																Total		**158.4**	**15.5**	**101.8**	**4.0**	**3.7**	**20.0**
																Total (tons)		**0.1**	**0.0**	**0.1**	**0.0**	**0.0**	
H-Frame Installation -- (18)				**12**		**5**		**1 Structures**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	4.3	0.1	0.4	0.0	0.0	1.0
3/4 Ton Pick up Truck, 4x4	300	Diesel	4			5	8		2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	20	8	4.0	0.1	0.4	0.0	0.0	2.3
1 Ton Crew Cab Flat Bed, 4x4	300	Diesel	2			5	8		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	8	0.6	0.1	0.6	0.1	0.1	0.6
Compressor Trailer	120	Diesel	2			5	7		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		7	4.5	1.1	6.6	0.6	0.5	1.6
Auger Truck	500	Diesel	2			5	5		0.6134	0.2065	1.5945	0.0567	0.0522	272.0000	0.0186		5	6.1	2.1	15.9	0.6	0.5	6.8
Extendable Flat Bed Pole Truck	350	Diesel	2			5	8		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		8	7.5	2.6	20.8	0.7	0.7	8.4
R/T Crane (M)	500	Diesel	2			5	8		0.4948	0.1466	1.2979	0.0470	0.0432	160.0000	0.0132		8	7.9	2.3	20.8	0.8	0.7	7.2
Water Truck	350	Diesel	1			5	6		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		8	3.8	1.3	10.4	0.4	0.3	4.2
Extendable Flat Bed Pole Truck	350	Diesel	2			5	8		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		8	7.5	2.6	20.6	0.7	0.7	8.4
																Total		46.3	12.4	96.8	3.8	3.5	40.4
																Total (tons)		**0.1**	**0.0**	**0.2**	**0.0**	**0.0**	
Install Conductor -- (19)				**220**		**20**		**30 Circuit Miles**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	79.6	2.2	8.1	0.1	0.1	74.7
3/4-Ton Pick-up Truck, 4x4	300	Diesel	4		4	20	10		2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	40	50	6.3	0.2	0.7	0.0	0.0	2.9
1-Ton Crew Cab Flat Bed, 4x4	300	Diesel	8			20	10		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	10	2.8	0.6	3.0	0.5	0.5	11.5
Wire Truck/Trailer	350	Diesel	4			14	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	58.5
R/T Crane (M)	215	Diesel	4			20	10		0.3745	0.0978	0.8256	0.0361	0.0332	97.2000	0.0088		10	15.0	3.9	33.0	1.4	1.3	38.9
Dump Truck	350	Diesel	2			20	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	9.4	3.2	26.0	0.9	0.8	41.8
Bucket Truck	350	Diesel	4			20	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	18.8	6.5	52.0	1.8	1.6	83.6
22-Ton Manitex	350	Diesel	4			20	10		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		10	12.3	4.4	43.6	1.4	1.3	54.4
Splicing Rig	350	Diesel	2			5	5		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		5	3.1	1.1	10.9	0.3	0.3	3.4
Splicing Lab	300	Diesel	2			5	5	1.6 Miles/Day	0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		5	3.1	1.1	10.9	0.3	0.3	3.4
Sock Line Puller	300	Diesel	2			5	6		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		6	3.7	1.3	13.1	0.4	0.4	4.1
Bull Wheel Puller	350	Diesel	2			10	10		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		10	6.2	2.2	21.8	0.7	0.6	13.6
Backhoe/Front Loader	125	Diesel	2			10	8		0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		6	11.6	3.5	29.2	1.0	0.9	27.6
D8 Cat	350	Diesel	1			10	8		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		8	2.5	0.9	8.7	0.3	0.3	5.4
Hughes 500 E Helicopter		Jet A	2			10	7		2.1989	1.7655	1.4214	0.0445	0.0409	763.4927	0.0000		7	30.8	24.7	19.9	0.6	0.6	53.4
Fuel, Helicopter Support Truck	300	Diesel	2			10	7		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		7	4.3	1.6	15.3	0.5	0.4	9.5
Sag Cat w/ 2 winches	350	Diesel	1			5	10		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		10	3.1	1.1	10.9	0.3	0.3	3.4
Static Truck/ Tensioner	350	Diesel	2			10	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	9.4	3.2	26.0	0.9	0.8	20.9
																Total		**240.8**	**68.4**	**385.2**	**13.4**	**12.3**	**511.1**
																Total (tons)		**1.2**	**0.3**	**1.0**	**0.1**	**0.1**	
Guard Structure Removal -- (20)				**12**		**8**		**138 Structures**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	4.3	0.1	0.4	0.0	0.0	1.6
3/4-Ton Pick-up Truck, 4x4	300	Diesel	4			8	7		2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	40	50	2.5	0.1	0.3	0.0	0.0	0.0
1-Ton Crew Cab Flat Bed, 4x4	300	Diesel	4			8	7		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	7	1.0	0.2	1.1	0.2	0.2	1.6
Compressor Trailer	120	Diesel	4			8	7		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		7	9.0	2.1	13.1	1.2	1.1	5.3
Extendable Flat Bed Pole Truck	350	Diesel	4			8	6	17.2 Structures/Day	0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		6	11.3	3.9	31.2	1.1	1.0	20.1
Water Truck	300	Diesel	2			8	10		0.4236	0.1474	1.2027	0.0408	0.0375	188.0000	0.0133		10	8.5	2.9	24.1	0.8	0.8	15.0
R/T Crane (M)	500	Diesel	2			8	8		0.4948	0.1468	1.2979	0.0470	0.0432	180.0000	0.0132		8	7.9	2.3	20.8	0.8	0.7	11.5
80ft. Hydraulic Man-lift / Bucket Truck	350	Diesel	2			8	4		0.3637	0.0870	0.9773	0.0354	0.1358	143.9610	0.0079		4	2.9	0.7	7.8	0.3	1.1	4.6
																Total		**47.5**	**12.4**	**98.7**	**4.3**	**4.8**	**58.7**
																Total (tons)		**0.2**	**0.0**	**0.4**	**0.0**	**0.0**	
Restoration -- (21)				**14**		**3**		**8 Miles**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	5.1	0.1	0.5	0.0	0.0	0.7
1-Ton Crew Cab, 4x4	300	Diesel	4			3	2		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	2	0.3	0.1	0.3	0.1	0.0	0.2
Motor Grader	350	Diesel	2			3	6		0.5992	0.1759	1.5242	0.0550	0.0506	229.0000	0.1398		6	7.2	2.1	18.3	0.7	0.6	4.1
Water Truck	350	Diesel	2			3	8		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		8	7.5	2.6	20.8	0.7	0.7	5.0
Backhoe/Front Loader	350	Diesel	2			3	6	2.5 Miles/Day	0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		6	8.7	2.6	21.9	0.8	0.7	6.2
Drum Type Compactor	250	Diesel	2			3	6		0.3595	0.1207	1.1333	0.0429	0.0395	122.2913	0.0109		6	4.3	1.4	13.6	0.5	0.5	2.2
Track Type Dozer	350	Diesel	2			3	6		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236		6	11.1	3.1	26.3	1.1	1.0	3.9
Lowboy Truck/Trailer	300	Diesel	2			3	3		0.4236	0.1474	1.2027	0.0408	0.0375	188.0000	0.0133		3	2.5	0.9	7.2	0.2	0.2	1.7
																Total		**46.7**	**13.0**	**109.0**	**4.0**	**3.7**	**24.0**
																Total (tons)		**0.1**	**0.0**	**0.2**	**0.0**	**0.0**	
Retaining walls -- (22)				**100**		**53**		**11 Walls**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	36.2	1.0	3.7	0.0	0.0	90.0
1-Ton Crew Cab, 4x4	300	Diesel	4			53	10		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	10	1.4	0.3	1.5	0.3	0.2	15.2
Motor Grader	250	Diesel	2			53	10		0.5992	0.1759	1.5242	0.0550	0.0506	229.0000	0.1398		10	12.0	3.5	30.5	1.1	1.0	121.4
Water Truck	350	Diesel	2			53	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	9.4	3.2	26.0	0.9	0.8	110.8
Backhoe/Front Loader	125	Diesel	2			53	10		0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		10	14.5	4.4	36.5	1.3	1.2	182.9

Drum Type Compactor	250	Diesel	2	53	10	4.8 days/wall	0.3595	0.1207	1.1333	0.0429	0.0395	122.2913	0.0109		10	7.2	2.4	22.7	0.9	0.8	64.8
Track Type Dozer	350	Diesel	2	53	10		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236		10	18.5	5.2	43.9	1.8	1.7	114.4
Concrete Mixer	350	Diesel	2	53	10		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		10	6.2	2.2	21.8	0.7	0.6	72.1
Excavator	250	Diesel	2	53	10		0.5102	0.1657	1.3127	0.0023	0.0021	174.0000	0.0115		10	10.2	3.3	26.3	0.0	0.0	92.2
Dump Truck	350	Diesel	2	53	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	9.4	3.2	26.0	0.9	0.8	110.8
Lowboy Truck/Trailer	300	Diesel	2	53	10		0.4236	0.1474	1.2027	0.0408	0.0375	188.0000	0.0133		10	8.5	2.9	24.1	0.8	0.8	99.6
														Total		**133.4**	**31.8**	**262.9**	**8.7**	**8.0**	**1074.1**
														Total (tons)		**3.5**	**0.8**	**7.0**	**0.2**	**0.2**	
														Grand Total (tlb/day)		2163.4	409.7	3792.3	138.7	128.4	
														Grand Total (tons)		21.1	5.8	46.6	1.7	1.6	8530.4

Transmission and Subtransmission Construction Equipment and Workforce Estimates

Shoo-Fly Construction Equipment and Workforce Estimates

Work Activity				Activity Production				EMFAC2011 Diesel Emission Factors (gms/mi) or OFFROAD Diesel Emissions Factors (lb/hr)							Average Speed (mph)	Miles per day or Hours per day	Estimated Emissions					
Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs/Day)	Estimated Production Per Day	CO	ROG	NO_x	PM_{10}	$PM_{2.5}$	CO_2	CH_4			CO (lbs/day)	ROG (lbs/day)	NO_x (lbs/day)	PM_{10} (lbs/day)	$PM_{2.5}$ (lbr/day)	CO_2e (MT/yr)
Survey – (1)				**16**	**26**		**20 Miles**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	5.8	0.2	0.6	0.0	0.0	7.1
1Ton Pick-up Truck, 4x4	300	Gas	8		26	10		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	10	2.8	0.6	3.0	0.5	0.5	14.9
															Total		**8.6**	**0.8**	**3.6**	**0.5**	**0.5**	**22.0**
															Total (tons)		**0.1**	**0.0**	**0.0**	**0.0**	**0.0**	
R/W Clearing – (3)				**15**	**14**		**20 Miles**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	5.4	0.2	0.6	0.0	0.0	3.6
1-Ton Truck, 4x4	300	Gas	3		14	10		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	10	1.1	0.2	1.1	0.2	0.2	3.0
Backhoe/Front Loader	350	Diesel	3		14	7		0.5992	0.1759	1.5242	0.0550	0.0506	229.0000	0.1398		7	12.6	3.7	32.0	1.2	1.1	33.7
Track Type Dozer	350	Diesel	3		14	7		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		7	9.9	3.4	27.3	0.9	0.9	30.7
Road Grader	350	Diesel	3		14	7		0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		7	15.2	4.6	38.3	1.3	1.2	50.7
Water Truck	300	Diesel	6		14	9		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236		9	50.0	14.2	118.5	4.9	4.5	81.6
Lowboy Truck/Trailer	500	Diesel	3		14	5		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236		5	13.9	3.9	32.9	1.4	1.3	22.7
															Total		**108.1**	**30.2**	**250.8**	**8.9**	**8.1**	**225.8**
															Total (tons)		**0.8**	**0.2**	**1.8**	**0.1**	**0.1**	
Roads & Landing Work – (4)				**24**	**60**		**13.2 Miles & 108 Pads**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	8.7	0.2	0.9	0.0	0.0	24.5
1-Ton Truck, 4x4	300	Gas	8		60	5		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	5	1.4	0.3	1.5	0.3	0.2	17.2
Backhoe/Front Loader	350	Diesel	4		60	7		0.5992	0.1759	1.5242	0.0550	0.0506	229.0000	0.1398		7	16.8	4.9	42.7	1.5	1.4	192.4
Track Type Dozer	350	Diesel	4		60	7		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		7	13.2	4.5	36.4	1.3	1.2	175.8
Motor Grader	350	Diesel	4		60	5		0.7245	0.2186	1.8255	0.0627	0.0572	345.0000	0.0197		5	14.5	4.4	36.5	1.3	1.2	207.0
Water Truck	300	Diesel	8		60	10		0.3595	0.1207	1.1333	0.0429	0.0395	122.2913	0.0109		10	28.8	9.7	90.7	3.4	3.2	293.5
Drum Type Compactor	250	Diesel	4		60	5		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236		5	18.5	5.2	43.9	1.8	1.7	129.5
Excavator	300	Diesel	4		36	7		0.5102	0.1657	1.3127	0.0023	0.0021	174.0000	0.0115		7	14.3	4.6	36.8	0.1	0.1	87.7
Lowboy Truck/Trailer	500	Diesel	4		36	4		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236		4	14.8	4.2	35.1	1.5	1.3	62.2
															Total		**130.8**	**38.1**	**324.4**	**11.1**	**10.2**	**1188.4**
															Total (tons)		**2.4**	**0.2**	**5.8**	**0.2**	**0.2**	
Shoo-fly Direct Buried Steel/Wood Poles (DBSP) Haul (5)				**8**	**120**		**300 DBSP Poles**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	2.9	0.1	0.3	0.0	0.0	16.3
¾-Ton Truck, 4x4	275	Gas	2		120	10		2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	20	10	2.5	0.1	0.3	0.0	0.0	34.3
Water Truck	300	Diesel	1		120	10		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236		10	9.3	2.6	21.9	0.9	0.8	129.5
Boom/Crane Truck	350	Diesel	2		120	8		0.3669	0.1175	1.0644	0.0378	0.0348	139.2000	0.0106		8	5.9	1.9	17.0	0.6	0.6	133.6
Flat Bed Pole Truck	400	Diesel	2		120	10		0.5185	0.1769	1.3986	0.0487	0.0448	230.0000	0.0160		10	10.4	3.5	28.0	1.0	0.9	276.0
															Total		**30.9**	**8.2**	**67.5**	**2.5**	**2.3**	**588.7**
															Total (tons)		**1.8**	**0.3**	**4.1**	**0.2**	**0.1**	
Shoo-fly Direct Buried Steel/Wood Pole Assembly (6)				**18**	**150**		**300 DBSP Poles**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	6.5	0.2	0.7	0.0	0.0	45.9
¾-Ton Truck, 4x4	275	Gas	2		150	6		2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	20	6	1.5	0.1	0.2	0.0	0.0	25.7
Compressor Trailer	120	Diesel	1		150	6		0.3216	0.0758	0.4687	0.0416	0.0383	46.9502	0.0068		6	1.9	0.5	2.8	0.2	0.2	21.1
1-Ton Truck, 4x4	300	Diesel	2		150	10		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649		10	16.0	3.5	17.1	3.0	2.7	488.4
4,000g Water Truck	350	Diesel	1		150	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	4.7	1.6	13.0	0.4	0.4	156.8
Boom/Crane Truck	350	Diesel	1		150	8		0.3669	0.1175	1.0644	0.0378	0.0348	139.2000	0.0106		8	2.9	0.9	8.5	0.3	0.3	83.5
															Total		**33.6**	**6.7**	**42.3**	**4.0**	**3.6**	**821.4**
															Total (tons)		**2.5**	**0.5**	**3.2**	**0.3**	**0.3**	
Install Shoo-fly Direct Buried Steel/Wood Pole (7)				**18**	**100**		**300 DBSP Poles**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	6.5	0.2	0.7	0.0	0.0	30.6
1-Ton Truck, 4x4	300	Diesel	2		100	6		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	6	0.4	0.1	0.5	0.1	0.1	8.6
Manlift/Bucket Truck	350	Diesel	2		100	10		0.3637	0.0870	0.9773	0.0014	0.0013	143.9610	0.0079		10	7.3	1.7	19.5	0.0	0.0	144.0
Boom/Crane Truck	350	Diesel	2		100	7		0.3669	0.1175	1.0644	0.0378	0.0348	139.2000	0.0106		7	5.1	1.6	14.9	0.5	0.5	97.4
Auger Truck	210	Diesel	2		70	8		0.1342	0.5792	1.0283	0.0459	0.0422	144.6000	0.0121		8	2.1	9.3	16.5	0.7	0.2	81.0
Water Truck	300	Diesel	2		100	10		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236		10	18.5	5.2	43.9	1.8	1.7	215.8
Backhoe/Front Loader	125	Diesel	2		100	10		0.7245	0.2186	1.8255	0.0622	0.0577	345.0000	0.0197		10	14.5	4.4	36.5	1.3	1.2	345.0
Extendable Flat Bed Pole Truck	400	Diesel	2		100	6		0.5185	0.1769	1.3986	0.0487	0.0448	230.0000	0.0160		6	6.2	2.1	16.8	0.6	0.5	138.0
															Total		**60.2**	**24.7**	**149.2**	**5.0**	**4.6**	**1060.4**
															Total (tons)		**3.0**	**1.2**	**7.5**	**0.3**	**0.2**	
Install Conductor/GW (8)				**165**	**20**		**20 Miles**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	50.7	1.7	6.1	0.1	0.1	56.1
¾-Ton Truck, 4x4	275	Gas	3		20	10		2.8566	0.1034	0.3141	0.0043	0.0039	648.3268	0.1090	20	10	3.8	0.1	0.4	0.0	0.0	8.6
1-Ton Truck, 4x4	300	Diesel	6		20	10		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649		10	48.0	10.5	51.4	8.9	8.1	195.4
Manlift/Bucket Truck	350	Diesel	3		20	10		0.3637	0.0870	0.9773	0.0354	0.0326	143.9610	0.0079		10	10.9	2.6	29.3	1.1	1.0	43.2
Boom/Crane Truck	350	Diesel	3		20	10		0.3669	0.1175	1.0644	0.0378	0.0348	139.2000	0.0106		10	11.0	3.5	31.9	1.1	1.0	41.8
R/T Crane (M)	215	Diesel	3		20	10		0.3745	0.0978	0.8256	0.0361	0.0332	97.2067	0.0088		10	11.2	2.9	24.8	1.1	1.0	29.2
Dump Truck	350	Diesel	2		20	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	9.4	3.2	26.0	0.9	0.8	41.8
Wire Truck/Trailer	350	Diesel	3		5.4	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	14.1	4.9	39.0	1.3	1.2	16.9
Sock Line Puller	300	Diesel	2		5.4	10		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		10	6.2	2.2	21.8	0.7	0.6	7.3
Bull Wheel Puller	350	Diesel	2		10	10		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		10	6.2	2.2	21.8	0.7	0.6	13.6

Static Truck/ Tensioner	350	Diesel	2		70	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	9.4	3.2	26.0	0.9	0.8	41.8
Splicing Rig	350	Diesel	2		5.4	10		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		10	6.2	2.2	21.8	0.7	0.6	7.3
Spacing Cart	10	Diesel	4		5.4	10		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		10	12.3	4.4	43.6	1.4	1.3	14.7
Backhoe/Front Loader	125	Diesel	2		4	8		0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		8	11.6	3.5	29.2	1.0	0.9	11.0
D8 Cat	350	Diesel	1		4	8		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		8	2.5	0.9	8.7	0.3	0.3	2.2
Sag Cat w/ 2 winches	*350*	*Diesel*	*1*		*4*	*10*		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		10	3.1	1.1	10.9	0.3	0.3	2.7
Lowboy Truck/Trailer	450	Diesel	3		20	10		0.5659	0.1917	1.4966	0.0527	0.0485	251.0000	0.0173		10	17.0	5.8	44.9	1.6	1.5	75.3
Hughes 500 E		Jet A	2		4	7		2.1989	1.7655	1.4214	0.0445	0.0409	763.4927	0.0000		7	30.8	24.7	19.9	0.6	0.6	21.4
Fuel, Helicopter Support Truck	300	Diesel	2		4	7		0.4236	0.1474	1.7077	0.0408	0.1358	188.0000	0.0133		7	5.9	2.1	16.8	0.6	1.9	5.3
															Total		**279.2**	**81.9**	**474.4**	**23.2**	**22.7**	**635.5**
															Total (tons)		**0.6**	**0.2**	**0.9**	**0.0**	**0.0**	
Remove Shoo-fly Conductor & GW (9)				**28**	**20**		**20 Circuit Miles**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	10.1	0.3	1.0	0.0	0.0	9.5
1-Ton Truck, 4×4	300	Diesel	8		20	10		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	10	2.8	0.6	3.0	0.5	0.5	11.5
Manlift/Bucket Truck	250	Diesel	6		20	10		0.3099	0.0713	0.7059	0.0319	0.0293	97.9342	0.0065		10	18.6	4.3	42.4	1.9	1.8	58.8
Sleeving Truck	300	Diesel	4		20	5		0.4236	0.1474	1.2027	0.0408	0.0375	188.0000	0.0133		5	8.5	2.9	24.1	0.8	0.8	37.6
Boom/Crane Truck	350	Diesel	4		20	5		0.3669	0.1175	1.0644	0.0378	0.0348	139.2000	0.0106		5	7.3	2.3	21.3	0.8	0.7	27.8
Bull Wheel Puller	500	Diesel	2		14	5		0.6064	0.2032	1.8639	0.0630	0.0580	265.0000	0.0183		5	6.1	2.0	18.6	0.6	0.6	18.6
Truck, Semi-Tractor	350	Diesel	2		10	2		0.3637	0.0870	0.9773	0.0354	0.0326	143.9610	0.0079		2	1.5	0.3	3.9	0.1	0.1	2.9
Hydraulic Rewind Puller	300	Diesel	2		14	5		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		5	4.7	1.6	13.0	0.4	0.4	14.6
4,000g Water Truck	350	Diesel	2		20	10		0.4710	0.1622	1.3007	0.0448	0.0412	209.0000	0.0146		10	9.4	3.2	26.0	0.9	0.8	41.8
Lowboy Truck/Trailer	450	Diesel	6		20	3		0.5659	0.1917	1.4966	0.0527	0.0485	251.0000	0.0173		3	10.2	3.5	26.9	0.9	0.9	45.2
															Total		**70.2**	**21.2**	**180.3**	**7.1**	**6.5**	**268.2**
															Total (tons)		**0.8**	**0.2**	**1.8**	**0.1**	**0.1**	
Shoo-fly Pole Removal (10)				**8**	**80**		**300 LWS Poles**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	2.9	0.1	0.3	0.0	0.0	10.9
1-Ton Truck, 4×4	300	Diesel	2		80	6		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	6	0.4	0.1	0.5	0.1	0.1	6.9
Compressor Trailer	60	Diesel	2		80	6		0.3216	0.0758	0.4682	0.0416	0.0383	46.9502	0.0068		6	3.9	0.9	5.6	0.5	0.5	22.5
Water Truck	300	Diesel	2		80	10		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236		10	18.5	5.2	43.9	1.8	1.7	172.6
Manlift/Bucket Truck	250	Diesel	2		80	10		0.3099	0.0713	0.7059	0.0319	0.0293	97.9342	0.0065		10	6.2	1.4	14.1	0.6	0.6	78.3
Boom/Crane Truck	350	Diesel	2		80	7		0.3669	0.1175	1.0644	0.0378	0.0348	139.2000	0.0106		7	5.1	1.6	14.9	0.5	0.5	78.0
Flat Bed Truck/Trailer	400	Diesel	2		80	6		0.5185	0.1769	1.3986	0.0487	0.0448	730.0000	0.0160		6	6.2	2.1	16.8	0.6	0.5	110.4
															Total		**43.3**	**11.5**	**96.1**	**4.2**	**3.8**	**479.6**
															Total (tons)		**1.7**	**0.5**	**3.8**	**0.2**	**0.2**	
Restoration (11)				**21**	**8**		**20 Miles**	3.2811	0.0923	0.3335	0.0038	0.0035	308.2209	0.0518	40	50	7.6	0.2	0.8	0.0	0.0	2.9
1-Ton Truck, 4×4	300	Diesel	6		8	4		0.7994	0.1746	0.8563	0.1476	0.1358	325.6138	0.0649	20	4	0.8	0.2	0.9	0.2	0.1	1.4
Backhoe/Front Loader	125	Diesel	3		8	7		0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0197		7	15.2	4.6	38.3	1.3	1.2	29.0
Motor Grader	250	Diesel	3		8	7		0.7245	0.2186	1.8255	0.0627	0.0577	345.0000	0.0107		7	15.2	4.0	38.3	1.3	1.2	29.0
Water Truck	300	Diesel	3		8	10		0.4236	0.1474	1.2027	0.0408	0.0375	188.0000	0.0133		10	12.7	4.4	36.1	1.2	1.1	22.6
Drum Type Compactor	100	Diesel	3		8	7		0.3081	0.1111	1.0899	0.0346	0.0318	136.0000	0.0100		7	6.5	2.3	22.9	0.7	0.7	11.4
Lowboy Truck/Trailer	450	Diesel	3		8	3		0.5659	0.1917	1.4966	0.0527	0.0485	251.0000	0.0173		3	5.1	1.7	13.5	0.5	0.4	9.0
															Total		**63.1**	**18.1**	**150.8**	**5.2**	**4.8**	**105.2**
															Total (tons)		**0.3**	**0.1**	**0.6**	**0.0**	**0.0**	
															Grand Total (lb/day)		837.6	241.3	1739.3	72.8	68.3	
															Grand Total (tons)		14.0	4.0	29.5	1.3	1.2	5397.4

Underground Subtransmission Line Installation

Distribution Land Disturbance

Project Feature	Site Quantity	Disturbed Acreage Calculation (L x W)	Total Acres Disturbed During Construction	Acres to be Restored	Acres Permanently Disturbed
Underground conduit Installation	7,920 linear feet	Linear feet x 15'	2.7	2.7	0
Vault	10	55' x 40'	0.5	0.5	0
Distribution Pole Removal	34	5' x 5'	<0.1	<0.1	0
Potential Replacement of Existing Subtransmission Wood Poles with LWS Poles	21	150' x 75'	5.3	5.3	0
Total Estimated Disturbance Acreage			8.6	8.6	0

Underground Subtransmission Line Installation

Underground Subtransmission Construction Equipment and Workforce Estimates

EMFAC2011 Diesel Emission Factors (gms/mi)
or
OFFROAD Diesel Emissions Factors (lb/hr)

Activity	Fuel Type	Equipment and Quantity	Number of Work Days	Duration of Use (Hours)	Estimated Workforce	CO	ROG	NO_X	PM_{10}	$PM_{2.5}$	CO_2	CH_4
Location 1	Diesel	2 – Line Truck	3	7	8	0.79937	0.174588	0.856323	0.147556	0.135752	325.6138	0.0649
	Diesel	2 – Pickup Truck	3	7		2.856639	0.103398	0.314083	0.004281	0.003916	648.3268	0.109
Location 2	Diesel	2 – Line Truck	3	7	8	0.79937	0.174588	0.856323	0.147556	0.135752	325.6138	0.0649
	Diesel	2 – Pickup Truck	3	7		2.856639	0.103398	0.314083	0.004281	0.003916	648.3268	0.109
Location 3	Diesel	2 – Line Truck	6	7	8	0.79937	0.174588	0.856323	0.147556	0.135752	325.6138	0.0649
	Diesel	2 – Pickup Truck	6	7		2.856639	0.103398	0.314083	0.004281	0.003916	648.3268	0.109
	Diesel	1 – Rodder Truck	5	6		0.79937	0.174588	0.856323	0.147556	0.135752	325.6138	0.0649
	·	1 – Cable Dolley	5	6								
Location 4	Diesel	1 – Reel Truck	5	6	7	0.79937	0.174588	0.856323	0.147556	0.135752	325.6138	0.0649
	Diesel	1 – Concrete Truck	20	4		0.47102	0.16216	1.30068	0.04476	0.041179	209	0.01464
	Diesel	1 – Dump Truck	20	6		0.47102	0.16216	1.30068	0.04476	0.041179	209	0.01464
	Diesel	1 – Backhoe	20	8		0.7245	0.2186	1.8255	0.0627	0.057684	345	0.0197

Telecommunications System Installation

Telecommunications System Land Disturbance

Project Feature	Site Quantity	Disturbance Acreage Calculation (L × W)	Acres Disturbed During Construction	Acres to be Restored*	Acres Permanently Disturbed
New cable to Banning Substation					
Devers-Valley No.2 M21-T1, trenching	1	690'x25'	0.4	0.4	None
Old Idyllwild Rd Crossing 500 kV, trenching	1	470'x25'	0.27	0.27	None
Crossing Lincoln St to Banning MEER, trenching	1	230'x25'	0.13	0.13	None
New cable to Maraschino Substation					
Devers-Valley No.2 M24-T1, trenching	1	1,460' × 25'	0.84	0.84	None
4x4 manholes	3	40'x50'	0.14	0.14	None
SCE vault to ECS manhole, trenching	1	1,550'x25'	0.89	0.89	None
Connect Devers-Vista OPGW to Banning Sub					
D-V 12, trenching	1	560' × 25'	0.32	0.32	None
Connect Devers-Vista OPGW to Maraschino Sub					
D-V 133, trenching	1	800' × 25'	0.46	0.46	None
Connect Devers-Vista OPGW to El Casco Sub east					
D-V 110, trenching	1	120' × 25'	0.07	0.07	None
Connect Devers-Vista OPGW to El Casco Sub west					
D-V 87, trenching	1	100' × 25'	0.06	0.06	None
Fiber Optic Cable Entrance at Devers					
D-EC 136 D-V 243 Trenching	2	80'x25' 329'x25'	0.24	0.24	None
Fiber Optic Cable Entrance at El Casco					
Tie between towers D-EC 2 EC-SB 96, Trenching	3	200'x25' 840'x25' 200'x25'	0.71	0.71	None
Fiber Optic Cable Entrance at San Bernardino					
SB-V 1 EC-SB 1, trenching	2	350'X25' 350'X25'	0.4	0.4	None
Connect San Bernardino to Inland District Office					
SB-V 7, trenching	1	200'X25'	0.11	0.11	None
Fiber Optic Cable Entrance at Vista					
D-V 1, trenching	1	1,000'x25'	0.57	0.57	None
New cable to Banning Substation					
Devers-Valley No.2 M21-T1, trenching	1	690'x25'	0.4	0.4	0
Old Idyllwild Rd Crossing 500 kV, trenching	1	470'x25'	0.3	0.3	0
Crossing Lincoln St to Banning MEER, trenching	1	230'x25'	0.1	0.1	0
New cable to Maraschino Substation					
Devers-Valley No.2 M24-T1, trenching	1	1,460' × 25'	0.8	0.8	0
4x4 manholes	3	40'x40'	0.1	0.1	0
SCE vault to ECS manhole, trenching	1	1,550'x25'	0.9	0.9	0
Connect Devers-Vista OPGW to Banning Sub					
D-V 12, trenching	1	560' × 25'	0.3	0.3	0
Connect Devers-Vista OPGW to Maraschino Sub					
D-V 133, trenching	1	800' × 25'	0.5	0.5	0
Connect Devers-Vista OPGW to El Casco Sub east					
D-V 110, trenching	1	120' × 25'	0.1	0.1	0
Connect Devers-Vista OPGW to El Casco Sub west					
D-V 87, trenching	1	100' × 25'	0.1	0.1	0
Fiber Optic Cable Entrance at Devers					
D-EC 136 D-V 243 Trenching	2	80'x25' 329'x25'	0.2	0.2	0

Fiber Optic Cable Entrance at El Casco					
Tie between towers EI-RC 2 RC-SB 96, Trenching	3	200'x25' 840'x25' 200'x25'	0.7	0.7	0
Fiber Optic Cable Entrance at San Bernardino					
SB-V 1 RC-SB 1, trenching	2	350'X25' 350'X25'	0.4	0.4	0
Connect San Bernardino to Inland District Office					
SB-V 1, trenching	1	200'X25'	0.1	0.1	0
Fiber Optic Cable Entrance at Vista					
D-V 1, trenching	1	1,000'x25'	0.6	0.6	0
Total Estimate Disturbance Area			5.6	5.6	0

Telecommunications System Land Disturbance Alternative (Segment 5)

Project Feature	Site Quantity	Disturbance Acreage Calculation (L x W)	Acres Disturbed During Construction	Acres to be Restored*	Acres Permanently Disturbed
Express Connection to Inland District Office					
Redlands Blvd at Reya Mesa Trenching	1	360'x25'	0.2	0.2	0

Telecommunications System Installation

Telecommunicotion System Construction Equipment and Workforce Estimates

Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs./day)	EMFAC2011 Diesel Emission Factors (gms/mi) or OFFROAD Diesel Emissions Factors (lb/hr)							Average Speed (mph)	Miles per day or Hours per day	Estimated Emissions					
							CO	ROG	NO_X	PM_{10}	$PM_{2.5}$	CO_2	CH_4			CO	ROG	NO_X	PM_{10}	$PM_{2.5}$	CO_2e
																(lbs/day)	(lbs/day)	(lbs/day)	(lbs/day)	(lbs/day)	(MT/yr)
Telecommunications work for OPGW and work to accommodate construction																					
Bucket Truck	300	Diesel	6	12	24	7	0.42356	0.14738	1.20274	0.04078	0.037518	188	0.01332		7	17.8	6.2	50.5	1.7	1.6	94.8
Crew Truck	300	Diesel	3	3	24	8	0.79937	0.174588	0.856323	0.147556	0.135752	325.6138	0.0649	20	8	0.8	0.2	0.9	0.2	0.1	4.1
Back hoe	200	Diesel	2	4	40	7	0.7245	0.2186	1.8255	0.0627	0.057684	345	0.0197		7	10.1	3.1	25.6	0.9	0.8	96.6
Dump truck	350	Diesel	2	3	17	3	0.47102	0.16216	1.30068	0.04476	0.041179	209	0.01464		3	2.8	1.0	7.8	0.3	0.2	10.7
Material Transport	350	Diesel	1	1	4	4	0.47102	0.16216	1.30068	0.04476	0.041179	209	0.01464		4	1.9	0.6	5.2	0.2	0.2	1.7
Fork lift	200	Diesel	1	1	4	1	0.3311	0.0524	0.3883	0.0214	0.019688	56.1	0.0047		1	0.3	0.1	0.4	0.0	0.0	0.1
Splice Lab	300	Diesel	6	12	36	7	0.42356	0.14738	1.20274	0.04078	0.037518	188	0.01332		7	17.8	6.2	50.5	1.7	1.6	142.1
															Total	51.6	17.3	140.9	4.9	4.5	350.1
															Total (tons)	0.9	0.3	2.5	0.1	0.1	
Telecommunications work inside the MEER																					
Crew Truck	300	Gas	3	3	30	8	2.856639	0.103398	0.314083	0.004281	0.003916	648.3268	0.129	20	8	3.0	0.1	0.3	0.0	0.0	10.3
															Total (tons)	0.0	0.0	0.0	0.0	0.0	
															Grand Total (tons)	1.0	0.3	2.5	0.1	0.1	360.3
															Fugitive Dust				5.0	1.0	
															Peak Phase Emission	51.6	17.3	140.9	9.9	5.6	

Note: The fugitive dust emissions were calculated using the maximum daily disturbed area. To calculate the maximum emissions, the fugitive dust emissions were added to the peak phase emissions

Work Activity				Activity Production				EMFAC2011 Diesel Emission Factors (gms/mi) or OFFROAD Diesel Emissions Factors (lb/hr)							Average Speed (mph)	Miles per day or Hours per day	Estimated Emissions					
Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs/Day)	Estimated Production Per Day	CO	ROG	NO$_X$	PM$_{10}$	PM$_{2.5}$	CO$_2$	CH$_4$			CO (lbs/day)	ROG (lbs/day)	NO$_X$ (lbs/day)	PM$_{10}$ (lbs/day)	PM$_{2.5}$ (lbs/day)	CO$_2$e (MT/yr)
1-Ton Truck, 4x4	300	Diesel	5		12			0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236	20	48	0.5	0.1	1.2	0.0	0.0	0.7
Hughes 500 E		Jet A	1		12	2		2.1989	1.7655	1.4214	0.0445	0.0409	763.4927	0.0000		2	4.4	3.5	2.8	0.1	0.1	9.2
3/4-Ton Pick-up Truck, 4:	300	Diesel	2		12	8		0.9259	0.2622	2.1947	0.0916	0.0843	215.8000	0.0236	40	8	1.3	0.4	3.1	0.1	0.1	1.8
Boom/Crane Truck	350	Diesel	2		12	7		0.3669	0.1175	1.0644	0.0378	0.0348	139.2000	0.0106		7	5.1	1.6	14.9	0.5	0.5	11.7
																Total	11.3	5.7	22.0	0.8	0.7	23.4

Total Construction Emissions

	Estimated Daily Emissions (lbs/day)				
Construction Activity	**CO**	**ROG**	**NOX**	**PM10**	**PM2.5**
Devers Substation	19.4	4.3	31.4	2.6	1.6
El Casco Substation	16.3	3.7	28.8	2.0	1.3
Vista Substation	17.0	3.7	28.9	2.2	1.3
San Bernardino Substation	19.4	4.3	31.4	4.1	2.0
Etiwanda Substation	1.0	0.0	0.1	0.0	0.0
Timoteo Substation	2.2	0.1	0.6	0.1	0.0
Tennessee Substation	2.2	0.1	0.6	0.0	0.0
220 kV Transmission Line	2,259.0	525.9	4,009.0	243.4	156.0
Shoo-Fly	837.6	241.3	1,739.3	165.2	87.7
66 kV Subtransmission Line	448.6	111.5	828.2	57.1	34.8
Telecommunications System	54.6	17.4	141.2	9.9	5.6
Total	3,677.3	912.2	6,839.5	486.8	290.4
SCAQMD Regional Threshold	**550**	**75**	**100**	**150**	**55**
Exceed SCAQMD Threshold?	**TRUE**	**TRUE**	**TRUE**	**TRUE**	**TRUE**

Total Construction Emissions after Implementation of APMs

	Estimated Daily Emissions (lbs/day)				
Construction Activity	**CO**	**ROG**	**NOX**	**PM10**	**PM2.5**
Devers Substation	19.4	4.3	25.1	2.3	1.6
El Casco Substation	16.3	3.7	23.0	1.8	1.2
Vista Substation	17.0	3.7	23.1	1.9	1.3
San Bernardino Substation	19.4	4.3	25.1	3.5	1.8
Etiwanda Substation	1.0	0.0	0.1	0.0	0.0
Timoteo Substation	2.2	0.1	0.5	0.1	0.0
Tennessee Substation	2.2	0.1	0.5	0.0	0.0
220 kV Transmission Line	2,259.0	525.9	3,207.2	195.6	145.9
Shoo-Fly	837.6	241.3	1,391.4	119.0	78.0
66 kV Subtransmission Line	448.6	111.5	662.5	44.1	32.1
Telecommunications System	54.6	17.4	113.0	7.4	5.1
Total	3,677.3	912.2	5,471.6	375.8	267.1
SCAQMD Regional Threshold	**550**	**75**	**100**	**150**	**55**
Exceed SCAQMD Threshold?	**TRUE**	**TRUE**	**TRUE**	**TRUE**	**TRUE**

Note: APMs reduce the NOx exhaust emissions by 20% and the fugitive dust (PM10 and PM2.5) emissions by 50%

Localized Significance Threshold Analysis

Activity	CO	ROG	NOX	PM10	PM2.5	
Substations						
Devers Substation Peak Phase	19.4	4.3	31.4	2.1	1.5	
El Casco Substation Peak Phase	16.3	3.7	28.8	1.6	1.2	
Vista Substation Peak Phase	17.0	3.7	28.9	1.7	1.2	
San Bernardino Substation Peak Phase	19.4	4.3	31.4	2.8	1.7	
Etiwanda Substation Peak Phase	1.0	0.0	0.1	0.0	0.0	
Timoteo Substation Peak Phase	2.2	0.1	0.6	0.0	0.0	
Tennessee Substation Peak Phase	2.2	0.1	0.6	0.0	0.0	
Transmission Lines Segment 1 - 4 and 6						
LST Foundation Installation	88.3	29.0	232.0	8.2	7.6	Note: It is assumed that only 20% of the emissions from the employee commutes, water trucks, dump trucks,
Soil Disturbance				49.8	10.5	concrete trucks, and helicopter would occur within the project area.
Single LST Foundation Installation	27.6	9.0	72.5	18.1	5.6	Note: The project schedule estimates that 3.2 LST foundations would be installed per day
Single LST Foundation Installation - After APMs	27.6	9.0	58.0	10.3	4.0	Note: APMs reduce the NOx exhaust emissions by 20% and the fugitive dust (PM10 and PM2.5) emissions by 50%
Transmission Lines Segment 5						
TSP Foundation Installation	87.7	27.6	227.0	8.2	7.6	Note: It is assumed that only 20% of the emissions from the employee commutes, water trucks, dump trucks,
Soil Disturbance				49.8	10.5	and concrete trucks would occur within the project area.
Single TSP Foundation Installation	35.1	11.0	90.8	23.2	7.2	Note: The project schedule estimates that 2.5 TSP foundations would be installed per day
Single LST Foundation Installation - After APMs	35.1	11.0	72.6	13.2	5.1	Note: APMs reduce the NOx exhaust emissions by 20% and the fugitive dust (PM10 and PM2.5) emissions by 50%
Shoo-Fly						
Installation of Conductor	194.5	56.5	419.3	21.5	20.0	Note: It is assumed that only 20% of the emissions from the employee commutes, dump trucks, fuel truck, and
Soil Disturbance				49.8	10.5	helicopter would occur within the project area.
Single TSP Foundation Installation	48.6	14.1	104.8	17.8	7.6	Note: Emissions were divided by 4 to estimate the emissions within 1/4 mile of the receptor
Single LST Foundation Installation - After APMs	48.6	14.1	83.9	11.6	6.3	Note: APMs reduce the NOx exhaust emissions by 20% and the fugitive dust (PM10 and PM2.5) emissions by 50%
Subtransmission Line						
Installation of Conductor	39.0	12.5	92.9	3.6	3.3	Note: It is assumed that only 20% of the emissions from the employee commutes, dump trucks, fuel truck, and
Soil Disturbance				49.8	10.5	helicopter would occur within the project area.
Single TSP Foundation Installation	9.7	3.1	23.2	13.3	3.4	Note: Emissions were divided by 4 to estimate the emissions within 1/4 mile of the receptor
Single LST Foundation Installation - After APMs	9.7	3.1	18.6	7.1	2.1	Note: APMs reduce the NOx exhaust emissions by 20% and the fugitive dust (PM10 and PM2.5) emissions by 50%
Telecommunications System						
Telecommunications Work	51.6	17.3	140.9	4.9	4.5	
Soil Disturbance				5.0	1.0	
Total	51.6	17.3	140.9	9.9	5.6	
Telecommunications System - After APMs	51.6	17.3	112.7	7.4	5.1	Note: APMs reduce the NOx exhaust emissions by 20% and the fugitive dust (PM10 and PM2.5) emissions by 50%
Alternative Project						
LST Foundation Installation	116.2	35.3	285.2	10.0	9.2	Note: It is assumed that only 20% of the emissions from the employee commutes, water trucks, dump trucks,
Soil Disturbance				49.8	10.5	and concrete trucks would occur within the project area.
Single LST Foundation Installation	36.3	11.0	89.1	18.7	6.2	Note: The project schedule estimates that 3.2 LST foundations would be installed per day
Single LST Foundation Installation - After APMs	36.3	11.0	71.3	10.9	4.5	Note: APMs reduce the NOx exhaust emissions by 20% and the fugitive dust (PM10 and PM2.5) emissions by 50%

Morongo Reservation Lands

Source	CO	ROG	NOX	PM10 Exhaust	PM10 Dust	Total PM10	PM2.5 Exhaust	PM2.5 Dust	Total PM2.5
Transmission Lines - Segment 4	1.3	0.4	2.9	0.1	0.3	0.4	0.1	0.1	0.2
Transmission Lines - Segment 5	7.2	1.9	14.7	0.6	2.0	2.6	0.5	0.4	0.9
Shoo-fly Line	2.3	0.7	4.9	0.2	1.1	1.4	0.2	0.2	0.4
Total Amortized over 3 years	**3.6**	1.0	**7.5**			**1.4**			0.5
Total Amortized over 3 years w/APMs	**3.6**	1.0	**6.0**			0.9			0.4

BLM Lands

Source	CO	ROG	NOX	PM10 Exhaust	PM10 Dust	Total PM10	PM2.5 Exhaust	PM2.5 Dust	Total PM2.5
Transmission Lines - Segment 6	3.2	0.9	7.0	0.3	0.7	0.9	0.2	0.1	0.4
Shoo-fly Line	0.3	0.1	0.7	0.0	0.2	0.2	0.0	0.0	0.1
Total Amortized over 3 years	**1.2**	**0.3**	**2.6**			**0.4**			0.1
Total Amortized over 3 years w/APMs	**1.2**	0.3	2.1			0.2			0.1

Morongo Reservation Lands - Alternative Project

Source	CO	ROG	NOX	PM10 Exhaust	PM10 Dust	Total PM10	PM2.5 Exhaust	PM2.5 Dust	Total PM2.5
Transmission Lines - Segment 4	1.3	0.4	2.9	0.1	0.3	0.4	0.1	0.1	0.2
Transmission Lines - Segment 5	7.7	1.9	14.4	0.6	1.9	2.5	0.5	0.4	0.9
Shoo-fly Line	2.3	0.7	4.9	0.2	1.1	1.4	0.2	0.2	0.4
Total Amortized over 3 years	**3.8**	1.0	**7.4**			**1.4**			0.5
Total Amortized over 3 years w/APMs	**3.8**	1.0	**5.9**			0.8			**0.4**

Note: APMs reduce the NOx exhaust emissions by 20% and the fugitive dust (PM10 and PM2.5) emissions by 50%

EMFAC2011 Emission Rates
Region Type: Air Basin
Region: South Coast
Calendar Year: 2013
Season: Annual
Vehicle Classification: EMFAC2007 Categories

Region	CalYr	Season	Veh_Class	Fuel	MdlYr	Speed (miles/hr)	VMT (miles/day)	ROG RUNEX (gms/mile)	TOG RUNEX (gms/mile)	CO RUNEX (gms/mile)	NOX RUNEX (gms/mile)	CO2 RUNEX (gms/mile)	CO2 RUNEX (Pavley I+LCFS) (gms/mile)	PM10 RUNEX (gms/mile)	PM2.5 RUNEX (gms/mile)
South Coas	2013	Annual	LDA	DSL	Aggregated	5	1518.492972	0.1697602	0.1932607	1.091999	0.8803133	452.3122	399.0904211	0.1283494	0.1180815
South Coas	2013	Annual	LDA	DSL	Aggregated	10	5411.987045	0.1559539	0.1775431	0.9303993	0.8120416	420.69323	372.4021387	0.1182497	0.1087897
South Coas	2013	Annual	LDA	DSL	Aggregated	15	13087.90922	0.1234157	0.1405005	0.6653846	0.6954316	373.9738	333.3155158	0.0936049	0.0861165
South Coas	2013	Annual	LDA	DSL	Aggregated	20	39067.79093	0.0998977	0.1137269	0.4980111	0.6143708	342.49907	306.9566482	0.0757739	0.069712
South Coas	2013	Annual	LDA	DSL	Aggregated	25	91065.39384	0.0816564	0.0929604	0.3867842	0.5588561	321.82335	289.6046549	0.0618886	0.0569375
South Coas	2013	Annual	LDA	DSL	Aggregated	30	114370.9368	0.0684273	0.0778999	0.3144342	0.5263978	309.61282	279.3759793	0.0518082	0.0476635
South Coas	2013	Annual	LDA	DSL	Aggregated	35	76324.67244	0.0583287	0.0664033	0.2659683	0.5118887	304.40897	275.0435246	0.0440817	0.0405552
South Coas	2013	Annual	LDA	DSL	Aggregated	40	55496.12363	0.0516609	0.0588125	0.2364098	0.5149601	306.00224	276.4332046	0.0389918	0.0358724
South Coas	2013	Annual	LDA	DSL	Aggregated	45	46523.6128	0.0471228	0.0536461	0.2192949	0.534084	314.36341	283.4443034	0.0355266	0.0326845
South Coas	2013	Annual	LDA	DSL	Aggregated	50	40623.01658	0.0439774	0.0500653	0.2118144	0.5735567	330.45416	297.0239487	0.0330885	0.0304415
South Coas	2013	Annual	LDA	DSL	Aggregated	55	37610.6065	0.0421092	0.0479385	0.2130675	0.6372574	356.15526	318.678803	0.0316006	0.0290726
South Coas	2013	Annual	LDA	DSL	Aggregated	60	52665.80945	0.0415387	0.047289	0.223494	0.7306358	394.83108	351.1314873	0.0310754	0.0285894
South Coas	2013	Annual	LDA	DSL	Aggregated	65	29660.50747	0.0414656	0.0472058	0.242403	0.8666122	451.84874	399.2516176	0.0308255	0.0283594
South Coas	2013	Annual	LDA	DSL	Aggregated	70	1239.906154	0.0370184	0.042143	0.2590339	1.100272	532.04708	470.8458869	0.0266936	0.0245581
South Coas	2013	Annual	LDT1	DSL	Aggregated	5	71.67619688	0.2979423	0.3391874	1.7725209	1.2236927	431.79222	385.8110745	0.2514896	0.2313705
South Coas	2013	Annual	LDT1	DSL	Aggregated	10	251.4184534	0.2718301	0.3094605	1.5162089	1.1443936	408.25958	368.3087086	0.2296229	0.2112531
South Coas	2013	Annual	LDT1	DSL	Aggregated	15	611.1580826	0.2152307	0.2450258	1.0751153	0.972741	376.67917	342.7812363	0.1818787	0.1673284
South Coas	2013	Annual	LDT1	DSL	Aggregated	20	1814.841444	0.1745875	0.1987563	0.7993705	0.8563229	355.35865	325.6137705	0.1475561	0.1357516
South Coas	2013	Annual	LDT1	DSL	Aggregated	25	4272.191843	0.1427515	0.1625131	0.6136475	0.7711881	340.88203	313.3134358	0.1206153	0.1109661
South Coas	2013	Annual	LDT1	DSL	Aggregated	30	5466.988565	0.1194336	0.1359672	0.4930275	0.7188783	331.86327	305.4337231	0.1008685	0.092799
South Coas	2013	Annual	LDT1	DSL	Aggregated	35	3743.342196	0.1017474	0.1158327	0.4123673	0.6904922	327.35057	301.0005169	0.0858681	0.0789986
South Coas	2013	Annual	LDT1	DSL	Aggregated	40	2742.588159	0.0900239	0.1024863	0.3650959	0.6929763	328.30991	301.618758	0.0759125	0.0698395
South Coas	2013	Annual	LDT1	DSL	Aggregated	45	2292.760495	0.0818519	0.093183	0.3386926	0.7210775	334.33771	306.4948044	0.0689381	0.0634231
South Coas	2013	Annual	LDT1	DSL	Aggregated	50	1999.907158	0.0762191	0.0867704	0.3280921	0.776697	345.90822	315.8586667	0.0640913	0.058964
South Coas	2013	Annual	LDT1	DSL	Aggregated	55	1881.422092	0.0723744	0.0823934	0.3305053	0.8626349	364.30401	330.4913441	0.0607077	0.0558511
South Coas	2013	Annual	LDT1	DSL	Aggregated	60	2613.558458	0.0707599	0.0805555	0.3491668	0.9966703	392.12857	352.9307775	0.0591484	0.0544165
South Coas	2013	Annual	LDT1	DSL	Aggregated	65	1513.992631	0.069868	0.0795401	0.3792379	1.1732443	434.39495	386.1750365	0.0580727	0.0534269
South Coas	2013	Annual	LDT1	DSL	Aggregated	70	74.34596319	0.0672997	0.0766162	0.4055674	1.3551497	507.15749	441.3622781	0.0553792	0.0509489
South Coas	2013	Annual	LDT2	DSL	Aggregated	5	73.54935817	0.2253354	0.2565294	1.4251797	1.1960246	432.84985	391.6300667	0.1843569	0.1696083
South Coas	2013	Annual	LDT2	DSL	Aggregated	10	254.9872435	0.206803	0.2354315	1.2224876	1.1175327	407.46585	371.3349828	0.1696351	0.1560643
South Coas	2013	Annual	LDT2	DSL	Aggregated	15	619.9818569	0.1636537	0.1863088	0.8687659	0.9507535	372.72213	342.0828678	0.1343027	0.1235585
South Coas	2013	Annual	LDT2	DSL	Aggregated	20	1841.888319	0.1326959	0.1510655	0.6473556	0.8373384	349.26662	322.3690747	0.1089125	0.1001995
South Coas	2013	Annual	LDT2	DSL	Aggregated	25	4353.833692	0.1082431	0.1232275	0.4980101	0.7552186	333.49941	308.6891977	0.0887626	0.0816616
South Coas	2013	Annual	LDT2	DSL	Aggregated	30	5591.101865	0.0904095	0.1029252	0.4009501	0.7049456	323.81763	300.1434707	0.0740602	0.0681354
South Coas	2013	Annual	LDT2	DSL	Aggregated	35	3847.680159	0.076863	0.0875034	0.3358746	0.6780187	319.15823	295.6864652	0.0628571	0.0578285

South Coas	2013	Annual	LDT2	DSL	Aggregated	40	2822.969967	0.0680284	0.0774458	0.2975764	0.6803295	320.2319	296.4705085	0.05556	0.0511152
South Coas	2013	Annual	LDT2	DSL	Aggregated	45	2360.01901	0.0619359	0.0705099	0.2760813	0.7076038	326.76108	301.9691522	0.050503	0.0464628
South Coas	2013	Annual	LDT2	DSL	Aggregated	50	2060.266468	0.0577719	0.0657695	0.2671141	0.7611963	339.28468	312.4920528	0.0470005	0.0432404
South Coas	2013	Annual	LDT2	DSL	Aggregated	55	1939.128602	0.0549988	0.0626125	0.2687173	0.8450601	359.28763	329.1810842	0.0445951	0.0410275
South Coas	2013	Annual	LDT2	DSL	Aggregated	60	2694.428014	0.0539708	0.0614422	0.2832866	0.9753311	389.49022	354.5726944	0.0435618	0.0400769
South Coas	2013	Annual	LDT2	DSL	Aggregated	65	1568.585597	0.0534853	0.0608895	0.3068746	1.1483146	435.14051	392.3888346	0.0428233	0.0393974
South Coas	2013	Annual	LDT2	DSL	Aggregated	70	79.96357158	0.0515154	0.0586468	0.3248728	1.320465	512.97619	454.9884141	0.0404562	0.0372197
South Coas	2013	Annual	LHD1	DSL	Aggregated	5	4819.804193	0.4794608	0.5458343	3.2087756	6.4283234	523.24475	518.0123029	0.1122396	0.1032604
South Coas	2013	Annual	LHD1	DSL	Aggregated	10	15410.11794	0.4532929	0.5160438	2.8316206	5.8602756	523.87485	518.6360978	0.1048628	0.0964737
South Coas	2013	Annual	LHD1	DSL	Aggregated	15	35811.66705	0.358979	0.4086738	1.9931501	4.9517691	523.86861	518.6299204	0.0831393	0.0764881
South Coas	2013	Annual	LHD1	DSL	Aggregated	20	103455.998	0.2906372	0.3308711	1.4676283	4.3415235	523.90106	518.6620471	0.0674437	0.0620482
South Coas	2013	Annual	LHD1	DSL	Aggregated	25	218260.4423	0.2390395	0.2721306	1.1256281	3.9278359	523.77012	518.532415	0.0555115	0.0510706
South Coas	2013	Annual	LHD1	DSL	Aggregated	30	315969.0803	0.2014473	0.2293344	0.9046828	3.6855026	523.63941	518.403018	0.046694	0.0429585
South Coas	2013	Annual	LHD1	DSL	Aggregated	35	284789.2017	0.1727244	0.1966352	0.7580419	3.5778078	523.45153	518.2170176	0.0400126	0.0368116
South Coas	2013	Annual	LHD1	DSL	Aggregated	40	264300.8595	0.1522096	0.1732805	0.6676339	3.604492	523.38827	518.1543912	0.0352681	0.0324467
South Coas	2013	Annual	LHD1	DSL	Aggregated	45	268205.1288	0.1373759	0.1563933	0.6165333	3.7600907	523.33848	518.1050964	0.0318222	0.0292764
South Coas	2013	Annual	LHD1	DSL	Aggregated	50	269655.6249	0.1265689	0.1440903	0.5946699	4.0784596	523.35514	518.1215855	0.0293905	0.0270393
South Coas	2013	Annual	LHD1	DSL	Aggregated	55	322251.4596	0.1195431	0.1360918	0.6021496	4.5789025	523.31959	518.086397	0.0277359	0.025517
South Coas	2013	Annual	LHD1	DSL	Aggregated	60	796168.6492	0.1161307	0.1322071	0.6429356	5.3444022	523.34765	518.1141734	0.0269517	0.0247955
South Coas	2013	Annual	LHD1	DSL	Aggregated	65	696482.1653	0.113636	0.129367	0.7055368	6.4468092	523.24619	518.0137276	0.0263331	0.0242265
South Coas	2013	Annual	LHD1	DSL	Aggregated	70	57675.10274	0.0997605	0.1135707	0.7083411	8.0221746	522.19945	516.9774563	0.0236429	0.0217515
South Coas	2013	Annual	LHD2	DSL	Aggregated	5	1627.869076	0.4603984	0.524133	3.1077493	6.1545301	524.68654	519.4396715	0.112056	0.1030915
South Coas	2013	Annual	LHD2	DSL	Aggregated	10	5409.120989	0.4330484	0.4929968	2.7248594	5.6039461	525.49516	520.2402061	0.1045929	0.0962255
South Coas	2013	Annual	LHD2	DSL	Aggregated	15	12581.90887	0.3432505	0.3907679	1.918982	4.7364089	525.51955	520.2643502	0.0829985	0.0763586
South Coas	2013	Annual	LHD2	DSL	Aggregated	20	36577.83109	0.2781116	0.3166116	1.4137408	4.1524986	525.56294	520.3073086	0.0673587	0.0619701
South Coas	2013	Annual	LHD2	DSL	Aggregated	25	76254.73668	0.2291358	0.2608559	1.0856429	3.7602283	525.48153	520.2267109	0.0555459	0.0511022
South Coas	2013	Annual	LHD2	DSL	Aggregated	30	108853.8897	0.1928021	0.2194924	0.8723949	3.5269455	525.23109	519.9787774	0.0466202	0.0428906
South Coas	2013	Annual	LHD2	DSL	Aggregated	35	96282.4243	0.1652991	0.188182	0.7313421	3.4251051	524.99547	519.745516	0.0399315	0.036737
South Coas	2013	Annual	LHD2	DSL	Aggregated	40	88906.02008	0.1455984	0.1657541	0.6441938	3.4496212	524.87489	519.626138	0.0351612	0.0323483
South Coas	2013	Annual	LHD2	DSL	Aggregated	45	89804.91012	0.13131	0.1494877	0.5948104	3.5976831	524.76629	519.5186257	0.0316873	0.0291523
South Coas	2013	Annual	LHD2	DSL	Aggregated	50	90865.97399	0.1210574	0.1378158	0.5741335	3.9020928	524.76158	519.5139628	0.0292657	0.0269245
South Coas	2013	Annual	LHD2	DSL	Aggregated	55	108193.8042	0.1141726	0.129978	0.5810908	4.3789281	524.63563	519.3892779	0.0275613	0.0253564
South Coas	2013	Annual	LHD2	DSL	Aggregated	60	267592.2141	0.1111293	0.1265133	0.6207104	5.1154644	524.8086	519.560511	0.026866	0.0247167
South Coas	2013	Annual	LHD2	DSL	Aggregated	65	232485.9718	0.108139	0.1231091	0.6801883	6.1539238	524.31786	519.074682	0.0260232	0.0239414
South Coas	2013	Annual	LHD2	DSL	Aggregated	70	18231.89816	0.0932118	0.1061154	0.6801069	7.6175984	521.9367	516.7173355	0.0225737	0.0207678
South Coas	2013	Annual	MDV	DSL	Aggregated	5	131.9255025	0.1403963	0.1598319	0.9205663	0.7132675	466.32897	437.9671151	0.1160688	0.1067833
South Coas	2013	Annual	MDV	DSL	Aggregated	10	456.5567194	0.1251825	0.1425119	0.7769251	0.660143	430.52167	405.464268	0.1035511	0.095267
South Coas	2013	Annual	MDV	DSL	Aggregated	15	1109.000642	0.0989423	0.1126392	0.5593616	0.5685647	377.48073	356.2791443	0.0819125	0.0753595
South Coas	2013	Annual	MDV	DSL	Aggregated	20	3297.890697	0.0801664	0.0912642	0.4222039	0.5055626	341.73392	323.1674999	0.0663966	0.0610849
South Coas	2013	Annual	MDV	DSL	Aggregated	25	7806.027188	0.0662148	0.0753812	0.3318175	0.4622038	318.41733	301.3936642	0.054833	0.0504464
South Coas	2013	Annual	MDV	DSL	Aggregated	30	10013.76565	0.0560015	0.063754	0.2721611	0.4356067	304.66675	288.4838367	0.0463436	0.0426361
South Coas	2013	Annual	MDV	DSL	Aggregated	35	6876.079277	0.0484291	0.0551333	0.2321729	0.4224088	298.87707	282.8826254	0.0400284	0.0368261
South Coas	2013	Annual	MDV	DSL	Aggregated	40	5035.726624	0.0431329	0.0491039	0.2069296	0.4232381	300.65785	284.4562355	0.0355902	0.032743
South Coa	**2013**	**Annual**	**MDV**	**DSL**	**Aggregated**	**45**	**4211.787818**	**0.0394849**	**0.0449509**	**0.1920666**	**0.4377292**	**310.1606**	**293.2464595**	**0.0325001**	**0.0299001**

South Coas	2013	Annual	MDV	DSL	Aggregated	50	3671.065021	0.037077	0.0422097	0.18507	0.4665562	328.4047	310.0761323	0.0304152	0.027982
South Coas	2013	Annual	MDV	DSL	Aggregated	55	3444.456812	0.0357625	0.0407133	0.1852363	0.5128219	357.62609	336.9796391	0.0291923	0.026857
South Coas	2013	Annual	MDV	DSL	Aggregated	60	4792.936145	0.0356358	0.0405689	0.1934499	0.5843272	401.62193	377.6453851	0.0288989	0.026587
South Coas	2013	Annual	MDV	DSL	Aggregated	65	2779.265625	0.0364891	0.0415404	0.2091882	0.6828463	466.82207	437.4503409	0.0293164	0.0269711
South Coas	2013	Annual	MDV	DSL	Aggregated	70	135.2814598	0.0374383	0.042621	0.2261793	0.7897405	567.16537	526.4361426	0.0297102	0.0273334
South Coas	2013	Annual	T6	DSL	Aggregated	5	6907.24378	3.291416	3.7470266	4.7653311	18.396331	2601.3912	2575.377249	0.7253155	0.6672903
South Coas	2013	Annual	T6	DSL	Aggregated	10	23119.56219	1.9420558	2.2108827	3.3109076	12.969167	2148.9524	2127.462871	0.5140993	0.4729714
South Coas	2013	Annual	T6	DSL	Aggregated	15	56464.97784	0.9986856	1.1369276	2.2299654	9.2138405	1764.4762	1746.831435	0.3522475	0.3240677
South Coas	2013	Annual	T6	DSL	Aggregated	20	158523.526	0.4083521	0.4648778	1.4372445	6.9377973	1391.9962	1378.076246	0.2281783	0.2099241
South Coas	2013	Annual	T6	DSL	Aggregated	25	351977.9154	0.337418	0.3841247	1.2484319	6.5014162	1298.7636	1285.775938	0.1947249	0.1791469
South Coas	2013	Annual	T6	DSL	Aggregated	30	484360.5629	0.2787125	0.317293	1.090285	6.1397593	1219.086	1206.895144	0.1705134	0.1568723
South Coas	2013	Annual	T6	DSL	Aggregated	35	419840.751	0.2322357	0.2643827	0.9628036	5.8518616	1152.9635	1141.433865	0.1555439	0.1431004
South Coas	2013	Annual	T6	DSL	Aggregated	40	410919.1632	0.1979876	0.2253938	0.8659878	5.6369473	1100.3961	1089.3921	0.1498164	0.1378311
South Coa	**2013**	**Annual**	**T6**	**DSL**	**Aggregated**	**45**	**460596.797**	**0.1759682**	**0.2003264**	**0.7998377**	**5.4960223**	**1061.3837**	**1050.76985**	**0.1533308**	**0.1410644**
South Coas	2013	Annual	T6	DSL	Aggregated	50	437674.5179	0.1661774	0.1891803	0.7643531	5.4288295	1035.9264	1025.567114	0.1660873	0.1528003
South Coas	2013	Annual	T6	DSL	Aggregated	55	451065.88	0.1686153	0.1919557	0.7595341	5.4368952	1024.0241	1013.783893	0.1880857	0.1730388
South Coas	2013	Annual	T6	DSL	Aggregated	60	666118.1536	0.1832819	0.2086525	0.7853808	5.5170722	1025.677	1015.420186	0.2193261	0.20178
South Coas	2013	Annual	T6	DSL	Aggregated	65	487709.1469	0.2101772	0.2392707	0.841893	5.6716903	1040.8848	1030.475994	0.2598084	0.2390237
South Coas	2013	Annual	T6	DSL	Aggregated	70	21709.75755	0.2493011	0.2838104	0.9290709	5.9095739	1069.6478	1058.951317	0.3095328	0.2847701
South Coas	2013	Annual	T7	DSL	Aggregated	5	12212.72951	5.446876	6.2008537	9.9467792	29.339712	4034.4139	3994.069716	0.7239813	0.6660628
South Coas	2013	Annual	T7	DSL	Aggregated	10	39282.26207	3.199317	3.6421788	6.6524024	21.112065	3332.7411	3299.413719	0.5356646	0.4928114
South Coas	2013	Annual	T7	DSL	Aggregated	15	104546.4982	1.6402302	1.8672772	4.2766859	15.296606	2736.4694	2709.104672	0.3895528	0.3583886
South Coas	2013	Annual	T7	DSL	Aggregated	20	476312.9321	0.7012526	0.7983227	2.9482914	12.197026	2155.2114	2133.659296	0.3295227	0.3031608
South Coas	2013	Annual	T7	DSL	Aggregated	25	627320.1777	0.5790185	0.6591685	2.3530887	10.669377	2014.2106	1994.068534	0.2427481	0.2233283
South Coas	2013	Annual	T7	DSL	Aggregated	30	912897.4205	0.4897051	0.5574919	2.1183615	9.9331184	1890.6413	1871.734849	0.2210965	0.2034088
South Coas	2013	Annual	T7	DSL	Aggregated	35	818355.6953	0.4165295	0.4741872	1.9355599	9.337087	1788.094	1770.213057	0.2099583	0.1931616
South Coas	2013	Annual	T7	DSL	Aggregated	40	763704.9114	0.3594919	0.4092542	1.804684	8.8806141	1706.5688	1689.503158	0.2093335	0.1925868
South Coa	**2013**	**Annual**	**T7**	**DSL**	**Aggregated**	**45**	**790979.0843**	**0.3185922**	**0.3626929**	**1.7257337**	**8.56462**	**1646.0658**	**1629.605153**	**0.2192221**	**0.2016843**
South Coas	2013	Annual	T7	DSL	Aggregated	50	785233.4918	0.2938303	0.3345034	1.6987091	8.389043	1606.5849	1590.519041	0.2396242	0.2204542
South Coas	2013	Annual	T7	DSL	Aggregated	55	902918.7955	0.2852063	0.3246857	1.7236102	8.3556082	1588.1261	1572.244822	0.2705396	0.2488965
South Coas	2013	Annual	T7	DSL	Aggregated	60	1778646.811	0.2927203	0.3332397	1.8004369	8.4598614	1590.6894	1574.782497	0.3119685	0.287011
South Coas	2013	Annual	T7	DSL	Aggregated	65	1497106.513	0.3163721	0.3601655	1.9291892	8.7084436	1614.2748	1598.132066	0.3639108	0.334798
South Coas	2013	Annual	T7	DSL	Aggregated	70	108552.705	0.3561618	0.4054631	2.1098673	9.1075931	1658.8824	1642.293527	0.4263666	0.3922572
South Coas	2013	Annual	LDA	GAS	Aggregated	5	474344.6735	0.2370761	0.3338577	3.1375627	0.2207398	1101.8686	1013.041646	0.0124945	0.0114272
South Coas	2013	Annual	LDA	GAS	Aggregated	10	1679758.494	0.1635983	0.2258623	2.7006236	0.1964378	816.83026	751.792868	0.0082601	0.0075425
South Coas	2013	Annual	LDA	GAS	Aggregated	15	4077729.82	0.1143789	0.156471	2.3289528	0.1757257	628.35836	578.3026283	0.0056067	0.0051135
South Coas	2013	Annual	LDA	GAS	Aggregated	20	12119221.57	0.0835597	0.1137109	2.0478364	0.1594632	502.27173	462.2537241	0.0040063	0.0036499
South Coas	2013	Annual	LDA	GAS	Aggregated	25	28428586.73	0.0634995	0.086181	1.8250221	0.146768	416.77327	383.4132083	0.0029842	0.0027162
South Coas	2013	Annual	LDA	GAS	Aggregated	30	36179865.92	0.0509122	0.06894	1.6559209	0.1380951	358.80102	329.9494244	0.0023419	0.0021295
South Coas	2013	Annual	LDA	GAS	Aggregated	35	24573313.57	0.0427055	0.0577256	1.519836	0.1317799	320.61174	294.6620325	0.0019251	0.0017489
South Coas	2013	Annual	LDA	GAS	Aggregated	40	17950949.8	0.0379581	0.0510772	1.4183241	0.1276679	297.67626	273.5380355	0.001681	0.0015258
South Coa	**2013**	**Annual**	**LDA**	**GAS**	**Aggregated**	**45**	**15015283.92**	**0.035398**	**0.0475158**	**1.3455787**	**0.1253336**	**287.25927**	**263.966023**	**0.0015481**	**0.0014039**
South Coas	2013	Annual	LDA	GAS	Aggregated	50	13080242.5	0.0346328	0.0463696	1.2915347	0.1254546	287.01342	263.7212013	0.0014977	0.0013572
South Coas	2013	Annual	LDA	GAS	Aggregated	55	12255985.43	0.035777	0.0478167	1.2721108	0.1282056	297.597	273.4089099	0.0015239	0.0013798

South Coas	2013	Annual	LDA	GAS	Aggregated	60	17051979.79	0.0386367	0.051511	1.2658132	0.1350727	316.63898	290.9229454	0.0016307	0.0014758
South Coas	2013	Annual	LDA	GAS	Aggregated	65	9786407.043	0.0433644	0.0577462	1.3035514	0.1418261	351.40697	322.6939924	0.0018141	0.001641
South Coas	2013	Annual	LDA	GAS	Aggregated	70	445851.8154	0.0425064	0.0571847	1.2602148	0.1348997	379.01798	346.4722698	0.0017925	0.0016216
South Coas	2013	Annual	LDT1	GAS	Aggregated	5	54821.31364	0.5959232	0.7777695	8.3430114	0.6573258	1268.6393	1185.498091	0.0286309	0.0262246
South Coas	2013	Annual	LDT1	GAS	Aggregated	10	188532.1095	0.427897	0.5480998	7.2299381	0.5801783	939.71927	880.6906351	0.0197162	0.018037
South Coas	2013	Annual	LDT1	GAS	Aggregated	15	459390.126	0.3032953	0.3866795	6.1220904	0.5048843	722.93439	677.3521604	0.0136623	0.0124895
South Coas	2013	Annual	LDT1	GAS	Aggregated	20	1362356.226	0.2239906	0.2854105	5.3043517	0.4486723	577.89061	541.5249457	0.0099351	0.0090763
South Coas	2013	Annual	LDT1	GAS	Aggregated	25	3230507.964	0.1697518	0.2167418	4.6180983	0.4024849	479.60938	448.8542991	0.0074395	0.006793
South Coas	2013	Annual	LDT1	GAS	Aggregated	30	4176996.468	0.1352951	0.1732092	4.1127523	0.3716358	413.01445	385.9599077	0.0058532	0.0053415
South Coas	2013	Annual	LDT1	GAS	Aggregated	35	2903131.635	0.1122076	0.1440493	3.7094471	0.3489777	369.20306	344.345333	0.0047962	0.0043743
South Coas	2013	Annual	LDT1	GAS	Aggregated	40	2138171.493	0.0994227	0.127293	3.4508377	0.3377896	342.70672	319.480208	0.0041899	0.0038187
South Coas	2013	Annual	LDT1	GAS	Aggregated	45	1785833.092	0.0923394	0.1180403	3.2810604	0.3334992	330.59989	308.2208746	0.0038477	0.0035042
South Coas	2013	Annual	LDT1	GAS	Aggregated	50	1561482.295	0.0897939	0.1146532	3.1741186	0.3379949	330.33416	307.9664031	0.0037028	0.0033696
South Coas	2013	Annual	LDT1	GAS	Aggregated	55	1478743.009	0.0915741	0.1169352	3.1491764	0.3504405	342.6403	319.2261457	0.0037266	0.0033884
South Coas	2013	Annual	LDT1	GAS	Aggregated	60	2049173.807	0.0973816	0.1245589	3.1803884	0.3777975	365.10892	340.259513	0.0039323	0.0035728
South Coas	2013	Annual	LDT1	GAS	Aggregated	65	1206566.469	0.1067568	0.1365945	3.2817926	0.4052176	405.05907	376.8497666	0.0042783	0.0038849
South Coas	2013	Annual	LDT1	GAS	Aggregated	70	66674.33024	0.10435	0.1349515	3.1359463	0.387218	436.34834	402.3893226	0.0042534	0.0038631
South Coas	2013	Annual	LDT2	GAS	Aggregated	5	165153.3186	0.2939683	0.4268491	4.1323926	0.4504217	1503.9998	1420.341119	0.0132257	0.0121375
South Coas	2013	Annual	LDT2	GAS	Aggregated	10	572770.3009	0.2050076	0.2913344	3.6790484	0.4005657	1114.7795	1054.375508	0.0088582	0.0081177
South Coas	2013	Annual	LDT2	GAS	Aggregated	15	1391115.647	0.1424668	0.2008314	3.2180478	0.3519469	857.60723	811.0417352	0.0060046	0.0054974
South Coas	2013	Annual	LDT2	GAS	Aggregated	20	4136506.971	0.1033978	0.1452294	2.8566388	0.3140828	685.51412	648.3268156	0.0042806	0.0039157
South Coas	2013	Annual	LDT2	GAS	Aggregated	25	9787379.411	0.0773988	0.1087029	2.544816	0.2826631	568.83221	537.6243638	0.0031612	0.00289
South Coas	2013	Annual	LDT2	GAS	Aggregated	30	12549006.13	0.0612118	0.0859658	2.3022411	0.2608894	489.74116	462.5297403	0.0024647	0.0022516
South Coas	2013	Annual	LDT2	GAS	Aggregated	35	8608171.452	0.0505898	0.0710785	2.0985243	0.2443991	437.65925	412.9252134	0.0020112	0.0018362
South Coas	2013	Annual	LDT2	GAS	Aggregated	40	6300360.488	0.044702	0.0625484	1.9511879	0.2346078	406.30198	383.2407887	0.0017525	0.0015987
South Coas	2013	Annual	LDT2	GAS	Aggregated	45	5269559.01	0.0414325	0.0578702	1.8399987	0.229047	392.02339	369.7889098	0.0016096	0.0014674
South Coas	2013	Annual	LDT2	GAS	Aggregated	50	4589680.654	0.0403603	0.0562544	1.7508437	0.2290344	391.72371	369.4940916	0.0015558	0.0014172
South Coas	2013	Annual	LDT2	GAS	Aggregated	55	4304636.978	0.0413956	0.0576373	1.6972407	0.2342614	406.21949	383.0338467	0.0015812	0.0014392
South Coas	2013	Annual	LDT2	GAS	Aggregated	60	5989996.943	0.0439965	0.0613209	1.6469449	0.2481573	432.44273	407.8199032	0.001686	0.001534
South Coas	2013	Annual	LDT2	GAS	Aggregated	65	3468345.252	0.0487597	0.0679578	1.6383528	0.2616464	479.98493	452.2312189	0.0018659	0.001697
South Coas	2013	Annual	LDT2	GAS	Aggregated	70	165606.7764	0.0504641	0.070074	1.6091918	0.2487427	517.57906	484.7049145	0.0018781	0.0017039
South Coas	2013	Annual	LHD1	GAS	Aggregated	5	25146.29326	0.7623605	0.8969546	9.3076167	0.4504193	2513.4971	2488.362121	0.0103627	0.0095548
South Coas	2013	Annual	LHD1	GAS	Aggregated	10	95251.46251	0.690684	0.8032221	8.2267281	0.4949721	2036.1281	2015.766818	0.0086746	0.0079954
South Coas	2013	Annual	LHD1	GAS	Aggregated	15	221117.6576	0.4590214	0.5343699	5.6017417	0.5194885	1392.4297	1378.505391	0.0057951	0.0053414
South Coas	2013	Annual	LHD1	GAS	Aggregated	20	577524.1179	0.320435	0.3740266	4.0620316	0.5445089	1006.0685	996.0078041	0.0040498	0.0037326
South Coas	2013	Annual	LHD1	GAS	Aggregated	25	1165428.714	0.2268886	0.2658822	3.040524	0.561423	768.01213	760.3320062	0.0029151	0.0026871
South Coas	2013	Annual	LHD1	GAS	Aggregated	30	1453293.352	0.1677107	0.1976062	2.410158	0.5810379	619.43363	613.2392893	0.0021891	0.0020181
South Coas	2013	Annual	LHD1	GAS	Aggregated	35	1172046.67	0.1283808	0.1520336	2.007454	0.5970791	527.84655	522.5680865	0.0017098	0.0015764
South Coas	2013	Annual	LHD1	GAS	Aggregated	40	1086047.245	0.1057508	0.1253903	1.8102074	0.6184967	475.23321	470.4808773	0.0014085	0.0012986
South Coas	2013	Annual	LHD1	GAS	Aggregated	45	1126001.3	0.0891531	0.1061244	1.700041	0.6328804	452.05587	447.5353098	0.0012001	0.0011065
South Coas	2013	Annual	LHD1	GAS	Aggregated	50	1059043.132	0.0781173	0.0933113	1.6859783	0.6501936	454.32181	449.7785963	0.0010679	0.0009847
South Coas	2013	Annual	LHD1	GAS	Aggregated	55	1066606.27	0.070976	0.0852951	1.7621124	0.6694278	482.41555	477.5913908	0.0009892	0.0009122
South Coas	2013	Annual	LHD1	GAS	Aggregated	60	1598343.17	0.0677877	0.0823752	1.9735084	0.7113952	541.20921	535.7971192	0.0009656	0.0008904
South Coas	2013	Annual	LHD1	GAS	Aggregated	65	1160686.933	0.070469	0.0855105	2.3919324	0.7504934	641.49793	635.0829459	0.0009905	0.0009132

South Coas	2013	Annual	LHD1	GAS	Aggregated	70	51421.06116	0.0441245	0.0568655	2.1331582	0.5882976	803.36245	795.328826	0.0009248	0.0008534
South Coas	2013	Annual	LHD2	GAS	Aggregated	5	2610.484209	0.6966656	0.8258387	9.3633078	0.4456118	2513.4971	2488.362154	0.0103826	0.0094621
South Coas	2013	Annual	LHD2	GAS	Aggregated	10	10374.34573	0.6149443	0.721957	8.1397769	0.4825069	2036.1281	2015.766852	0.0086244	0.0078578
South Coas	2013	Annual	LHD2	GAS	Aggregated	15	24050.7507	0.4099213	0.4817095	5.5574096	0.5073533	1392.4295	1378.505212	0.0057709	0.0052583
South Coas	2013	Annual	LHD2	GAS	Aggregated	20	62877.56713	0.286401	0.3375938	4.0332906	0.5325217	1006.0685	996.0078387	0.0040378	0.0036792
South Coas	2013	Annual	LHD2	GAS	Aggregated	25	125834.2469	0.203653	0.2410236	3.0296263	0.5509085	768.01207	760.3319515	0.0029124	0.0026541
South Coas	2013	Annual	LHD2	GAS	Aggregated	30	155554.1803	0.1502196	0.1787992	2.3986659	0.5682142	619.43363	613.2392949	0.0021781	0.0019846
South Coas	2013	Annual	LHD2	GAS	Aggregated	35	124064.9104	0.1150968	0.1376776	1.9993301	0.5834493	527.84655	522.5680812	0.0016976	0.0015468
South Coas	2013	Annual	LHD2	GAS	Aggregated	40	114846.9969	0.0948105	0.1135593	1.8016152	0.6042685	475.23322	470.480883	0.0013984	0.0012741
South Coas	2013	Annual	LHD2	GAS	Aggregated	45	118220.7679	0.0798121	0.0960103	1.6889472	0.6178495	452.05587	447.5353093	0.0011897	0.0010839
South Coas	2013	Annual	LHD2	GAS	Aggregated	50	110247.4989	0.0701971	0.0847241	1.6790779	0.6356093	454.3218	449.7785848	0.0010589	0.0009647
South Coas	2013	Annual	LHD2	GAS	Aggregated	55	109845.548	0.0636506	0.0772775	1.7519538	0.6512416	482.41552	477.5913682	0.0009751	0.0008882
South Coas	2013	Annual	LHD2	GAS	Aggregated	60	164891.431	0.0614712	0.0754623	1.9871642	0.6952654	541.20921	535.7971198	0.0009556	0.0008704
South Coas	2013	Annual	LHD2	GAS	Aggregated	65	120682.4052	0.0640062	0.0783795	2.4111799	0.7304835	641.49788	635.0828994	0.0009791	0.0008917
South Coas	2013	Annual	LHD2	GAS	Aggregated	70	4232.1386	0.0388257	0.0501025	2.0381471	0.5214642	803.36246	795.3288353	0.0008558	0.0007774
South Coas	2013	Annual	MCY	GAS	Aggregated	5	3879.59466	4.8430967	5.3241177	29.056636	1.1356866	252.35113	249.8276161	0.0014661	0.0011749
South Coas	2013	Annual	MCY	GAS	Aggregated	10	12418.04303	4.214717	4.6325525	26.338778	1.1226306	230.49437	228.1894222	0.0013114	0.0010486
South Coas	2013	Annual	MCY	GAS	Aggregated	15	30326.17322	3.3278889	3.6564801	22.596962	1.114364	196.19506	194.233113	0.0010461	0.000835
South Coas	2013	Annual	MCY	GAS	Aggregated	20	90141.08823	2.7543626	3.0247354	20.169793	1.1133429	171.27634	169.5635717	0.0008769	0.000699
South Coas	2013	Annual	MCY	GAS	Aggregated	25	219327.0878	2.3951823	2.6295998	18.812901	1.1227796	153.35387	151.8203284	0.0007643	0.0006087
South Coas	2013	Annual	MCY	GAS	Aggregated	30	290007.872	2.1898519	2.4029298	18.354513	1.1416318	140.84299	139.4345558	0.000697	0.0005547
South Coas	2013	Annual	MCY	GAS	Aggregated	35	207886.8762	2.1020053	2.304507	18.719178	1.1673937	132.7752	131.4474522	0.0006638	0.0005282
South Coas	2013	Annual	MCY	GAS	Aggregated	40	154454.4323	2.1089598	2.3116264	19.876532	1.1951301	128.58065	127.2948405	0.0006676	0.000531
South Coas	2013	Annual	MCY	GAS	Aggregated	45	128995.6219	2.2110075	2.4251823	22.051707	1.2245269	128.09032	126.8094216	0.0007066	0.0005617
South Coas	2013	Annual	MCY	GAS	Aggregated	50	113384.4304	2.4425704	2.678508	25.908544	1.2651637	131.48634	130.1714725	0.0007815	0.0006211
South Coas	2013	Annual	MCY	GAS	Aggregated	55	107802.5076	2.8353589	3.1071571	32.236735	1.3142546	139.34516	137.9517049	0.0009029	0.0007176
South Coas	2013	Annual	MCY	GAS	Aggregated	60	149517.2055	3.5145854	3.8356555	43.39767	1.3943207	152.81857	151.2903865	0.0010991	0.0008734
South Coas	2013	Annual	MCY	GAS	Aggregated	65	90568.07828	4.5380994	4.9392358	61.200623	1.4783602	173.88562	172.1467616	0.0013831	0.0010999
South Coas	2013	Annual	MCY	GAS	Aggregated	70	5975.309956	6.0850834	6.6089838	90.330466	1.5589161	206.01001	203.9499114	0.0017293	0.0013803
South Coas	2013	Annual	MDV	GAS	Aggregated	5	128047.6269	0.4278282	0.6169335	5.4632616	0.6469955	1908.7449	1831.909648	0.0137516	0.0126606
South Coas	2013	Annual	MDV	GAS	Aggregated	10	425957.8334	0.295818	0.416068	4.8390362	0.5688101	1413.4707	1358.785915	0.0091711	0.008433
South Coas	2013	Annual	MDV	GAS	Aggregated	15	1038383.375	0.2035748	0.2849294	4.2092336	0.4983852	1087.4068	1045.183918	0.006229	0.005724
South Coas	2013	Annual	MDV	GAS	Aggregated	20	3082394.052	0.146626	0.2053274	3.7284897	0.4441856	869.27191	835.5650258	0.0044512	0.0040879
South Coas	2013	Annual	MDV	GAS	Aggregated	25	7419943.952	0.1091186	0.1534901	3.3195531	0.4005972	721.49732	693.0895239	0.0033009	0.0030304
South Coas	2013	Annual	MDV	GAS	Aggregated	30	9706165.928	0.0854816	0.1209222	3.0010622	0.37019	621.37712	596.4694216	0.0025808	0.0023684
South Coas	2013	Annual	MDV	GAS	Aggregated	35	6841684.505	0.0699329	0.0995653	2.7351216	0.3474947	555.5394	532.7289003	0.002112	0.0019377
South Coas	2013	Annual	MDV	GAS	Aggregated	40	5046568.252	0.0613436	0.0871371	2.5412843	0.3338201	515.65452	494.3247889	0.0018401	0.0016874
South Coas	2013	Annual	MDV	GAS	Aggregated	45	4215092.477	0.0567312	0.0804785	2.4004864	0.3264181	497.46196	476.9068178	0.0016902	0.0015491
South Coas	2013	Annual	MDV	GAS	Aggregated	50	3678413.936	0.0548068	0.0778129	2.2865878	0.3265043	497.15645	476.5432718	0.0016308	0.0014941
South Coas	2013	Annual	MDV	GAS	Aggregated	55	3483151.179	0.0556373	0.0792402	2.2198226	0.3340743	515.74944	494.1769698	0.0016542	0.0015148
South Coas	2013	Annual	MDV	GAS	Aggregated	60	4830333.248	0.0584955	0.0840642	2.168468	0.3549863	549.38443	526.4724698	0.0017632	0.0016142
South Coas	2013	Annual	MDV	GAS	Aggregated	65	2873376.729	0.0638926	0.0923911	2.1564046	0.3768092	609.36855	583.4042015	0.0019515	0.0017865
South Coas	2013	Annual	MDV	GAS	Aggregated	70	162036.3309	0.0607677	0.0899506	1.9954556	0.3619461	657.03186	624.97555	0.0019618	0.0017979
South Coas	2013	Annual	MH	GAS	Aggregated	5	1360.764093	1.4497465	1.7008171	34.986337	0.7973618	2513.4971	2488.362085	0.0178036	0.0158303

South Coas	2013	Annual	MH	GAS	Aggregated	10	4292.547749	1.32707	1.532274	31.623122	0.8625355	2036.1282	2015.766928	0.0154227	0.0136628
South Coas	2013	Annual	MH	GAS	Aggregated	15	10354.45596	0.8852189	1.023143	21.576597	0.9071195	1392.4296	1378.505298	0.0102975	0.0091232
South Coas	2013	Annual	MH	GAS	Aggregated	20	26627.11248	0.6236102	0.7217904	15.809423	0.9503506	1006.0685	996.0078236	0.0072492	0.0064185
South Coas	2013	Annual	MH	GAS	Aggregated	25	57409.81917	0.4430648	0.5151044	11.835202	0.984891	768.01214	760.332016	0.0051979	0.0046052
South Coas	2013	Annual	MH	GAS	Aggregated	30	76852.72653	0.3255111	0.3807374	9.2892663	1.0198925	619.43359	613.239257	0.0038667	0.0034296
South Coas	2013	Annual	MH	GAS	Aggregated	35	66278.37146	0.2489343	0.2928155	7.6932368	1.0522759	527.84654	522.5680713	0.0029959	0.0026604
South Coas	2013	Annual	MH	GAS	Aggregated	40	63369.93074	0.2046311	0.2411141	6.9327344	1.0909322	475.23315	470.4808212	0.0024698	0.002193
South Coas	2013	Annual	MH	GAS	Aggregated	45	70095.78676	0.1726382	0.2042523	6.501721	1.1229858	452.05584	447.535285	0.0021006	0.0018661
South Coas	2013	Annual	MH	GAS	Aggregated	50	67024.3912	0.1505452	0.178744	6.3963173	1.1532911	454.32181	449.7785876	0.0018529	0.0016474
South Coas	2013	Annual	MH	GAS	Aggregated	55	69658.91063	0.1350555	0.1614295	6.5717516	1.1831181	482.41554	477.5913814	0.0016913	0.001506
South Coas	2013	Annual	MH	GAS	Aggregated	60	85833.32679	0.1286448	0.1550876	7.3149992	1.2320976	541.20922	535.7971303	0.0016319	0.0014536
South Coas	2013	Annual	MH	GAS	Aggregated	65	57240.85605	0.1348531	0.1621881	8.977539	1.2974154	641.49792	635.0829438	0.0016918	0.0015049
South Coas	2013	Annual	MH	GAS	Aggregated	70	3911.879059	0.0960012	0.1212518	8.0770911	1.1803567	803.36246	795.3288355	0.0014724	0.0013266
South Coas	2013	Annual	OBUS	GAS	Aggregated	5	602.9146723	0.916134	1.1296489	13.323951	0.9387177	2513.4972	2488.362234	0.0052767	0.0048326
South Coas	2013	Annual	OBUS	GAS	Aggregated	10	2281.695993	0.7317623	0.8903458	10.538008	0.9435638	2036.1282	2015.766939	0.0041745	0.0038289
South Coas	2013	Annual	OBUS	GAS	Aggregated	15	5475.157953	0.4887796	0.5956137	7.2081253	0.9934837	1392.4295	1378.505202	0.0027948	0.0025632
South Coas	2013	Annual	OBUS	GAS	Aggregated	20	14643.13561	0.3350393	0.4108	5.1456765	1.0283842	1006.0685	996.007813	0.0019343	0.0017742
South Coas	2013	Annual	OBUS	GAS	Aggregated	25	30464.68376	0.2437552	0.300451	3.9542276	1.0793218	768.01212	760.3319942	0.0014123	0.0012949
South Coas	2013	Annual	OBUS	GAS	Aggregated	30	38213.7785	0.1866976	0.2315717	3.2453327	1.1435974	619.43361	613.2392712	0.0010816	0.0009915
South Coas	2013	Annual	OBUS	GAS	Aggregated	35	30854.63771	0.1491818	0.1859089	2.8128005	1.2088927	527.84651	522.5680482	0.0008635	0.0007913
South Coas	2013	Annual	OBUS	GAS	Aggregated	40	29707.58902	0.1222698	0.1528634	2.5273701	1.2507967	475.23322	470.4808863	0.0007096	0.0006503
South Coas	2013	Annual	OBUS	GAS	Aggregated	45	31845.59561	0.1054576	0.1324831	2.4275002	1.3024193	452.05582	447.5352661	0.0006122	0.000561
South Coas	2013	Annual	OBUS	GAS	Aggregated	50	29291.30564	0.094545	0.119198	2.4547246	1.359089	454.32179	449.7785675	0.00055	0.0005039
South Coas	2013	Annual	OBUS	GAS	Aggregated	55	27967.28917	0.089738	0.1137778	2.6692095	1.4421268	482.41551	477.5913571	0.0005206	0.0004769
South Coas	2013	Annual	OBUS	GAS	Aggregated	60	34267.68603	0.0847501	0.109335	2.9612126	1.5098321	541.20922	535.7971253	0.0005041	0.0004618
South Coas	2013	Annual	OBUS	GAS	Aggregated	65	25000.58249	0.0834576	0.1078278	3.4117907	1.5339637	641.49789	635.0829112	0.0005021	0.0004603
South Coas	2013	Annual	OBUS	GAS	Aggregated	70	827.5977322	0.1002657	0.1336204	5.0478289	1.8849106	803.36238	795.3287513	0.0005958	0.0005446
South Coas	2013	Annual	SBUS	GAS	Aggregated	5	535.2558517	5.2144431	5.7165239	78.880497	1.6699603	2513.497	2488.361997	0.0320364	0.0276957
South Coas	2013	Annual	SBUS	GAS	Aggregated	10	1876.044316	4.1983146	4.6010741	63.774598	1.7055323	2036.1281	2015.766848	0.0257983	0.0223029
South Coas	2013	Annual	SBUS	GAS	Aggregated	15	3752.088619	2.8085916	3.07803	43.612991	1.7898509	1392.4296	1378.505298	0.0172586	0.0149202
South Coas	2013	Annual	SBUS	GAS	Aggregated	20	5092.850321	1.9584697	2.1462801	31.505099	1.8733888	1006.0685	996.0077858	0.0120349	0.0104042
South Coas	2013	Annual	SBUS	GAS	Aggregated	25	8039.406455	1.4236093	1.5602148	24.058427	1.9590037	768.01207	760.3319499	0.0087479	0.0075626
South Coas	2013	Annual	SBUS	GAS	Aggregated	30	9645.174097	1.0786653	1.1822301	19.410016	2.0446016	619.43358	613.2392484	0.006628	0.00573
South Coas	2013	Annual	SBUS	GAS	Aggregated	35	9899.557582	0.8520628	0.934162	16.571413	2.1371445	527.84652	522.5680546	0.0052347	0.0045254
South Coas	2013	Annual	SBUS	GAS	Aggregated	40	6682.724847	0.7015429	0.7693005	14.938651	2.2275758	475.23315	470.4808175	0.0043094	0.0037255
South Coas	2013	Annual	SBUS	GAS	Aggregated	45	3206.210511	0.6020517	0.6602697	14.219171	2.3154916	452.05582	447.535258	0.0036981	0.003197
South Coas	2013	Annual	SBUS	GAS	Aggregated	50	1605.767574	0.5384124	0.5902543	14.257875	2.3895053	454.32175	449.7785283	0.0033079	0.0028597
South Coas	2013	Annual	SBUS	GAS	Aggregated	55	2390.082389	0.5025271	0.551887	15.301916	2.5277794	482.41545	477.5912945	0.0030843	0.0026664
South Coas	2013	Annual	SBUS	GAS	Aggregated	60	1330.193077	0.4882922	0.5360367	17.124927	2.6015151	541.20914	535.7970449	0.0029976	0.0025914
South Coas	2013	Annual	T6	GAS	Aggregated	5	2142.591911	1.7573764	2.0498653	25.575137	1.2913729	2513.4971	2488.36212	0.010642	0.0095502
South Coas	2013	Annual	T6	GAS	Aggregated	10	7927.451027	1.4762128	1.7049375	21.339932	1.3554437	2036.128	2015.766766	0.0085431	0.0076513
South Coas	2013	Annual	T6	GAS	Aggregated	15	19072.69837	0.985416	1.1392944	14.583263	1.4256026	1392.4296	1378.505274	0.005718	0.005122
South Coas	2013	Annual	T6	GAS	Aggregated	20	50677.15108	0.6847404	0.7947997	10.530457	1.4919928	1006.0685	996.0078591	0.0039759	0.0035615
South Coas	2013	Annual	T6	GAS	Aggregated	25	106745.3793	0.4931005	0.5748952	7.9964505	1.5550482	768.0121	760.3319795	0.0028968	0.0025969

South Coas	2013	Annual	T6	GAS	Aggregated	30	134824.069	0.3708534	0.4346137	6.4408496	1.6181059	619.43363	613.2392925	0.002202	0.0019739
South Coas	2013	Annual	T6	GAS	Aggregated	35	109768.4225	0.2905327	0.3418468	5.4718455	1.6790795	527.84655	522.5680866	0.0017446	0.0015641
South Coas	2013	Annual	T6	GAS	Aggregated	40	105148.373	0.2389573	0.2817204	4.9277508	1.739563	475.23319	470.4808554	0.0014345	0.0012858
South Coas	2013	Annual	T6	GAS	Aggregated	45	113462.5844	0.2039425	0.2414264	4.6771324	1.7954073	452.05583	447.5352766	0.0012334	0.0011058
South Coas	2013	Annual	T6	GAS	Aggregated	50	104474.3478	0.1808668	0.2147273	4.6785805	1.8525253	454.32181	449.7785885	0.0011037	0.0009896
South Coas	2013	Annual	T6	GAS	Aggregated	55	99180.68544	0.1673315	0.1994641	4.9655951	1.9072854	482.41557	477.5914108	0.0010311	0.0009237
South Coas	2013	Annual	T6	GAS	Aggregated	60	119636.1582	0.159373	0.1922821	5.5520306	1.9950441	541.20923	535.7971357	0.000998	0.0008936
South Coas	2013	Annual	T6	GAS	Aggregated	65	85473.21186	0.1630654	0.1963091	6.6288728	2.0782809	641.49788	635.0829019	0.0010046	0.0008988
South Coas	2013	Annual	T6	GAS	Aggregated	70	2508.959214	0.1402071	0.1739	7.3435801	1.7458607	803.36239	795.3287708	0.0010485	0.0009306
South Coas	2013	Annual	T7	GAS	Aggregated	5	420.2583592	4.5135417	5.2187487	122.76085	3.5909998	2513.4973	2488.362368	0.0049088	0.0042161
South Coas	2013	Annual	T7	GAS	Aggregated	10	1743.661188	3.6706651	4.2160525	101.65667	3.7105815	2036.1284	2015.767091	0.0038434	0.0033002
South Coas	2013	Annual	T7	GAS	Aggregated	15	4170.170277	2.4530581	2.8208704	69.483886	3.906786	1392.4295	1378.505252	0.002575	0.002211
South Coas	2013	Annual	T7	GAS	Aggregated	20	10972.25125	1.6868871	1.9477803	50.038089	4.0593377	1006.0685	996.0078109	0.001783	0.0015302
South Coas	2013	Annual	T7	GAS	Aggregated	25	22406.87157	1.226002	1.4204357	38.151973	4.2446678	768.0121	760.3319787	0.0013067	0.0011213
South Coas	2013	Annual	T7	GAS	Aggregated	30	28548.75932	0.937491	1.0899016	30.8445	4.4612231	619.43363	613.239297	0.0009999	0.0008587
South Coas	2013	Annual	T7	GAS	Aggregated	35	23229.2744	0.7466669	0.8703011	26.309828	4.6746094	527.84655	522.5680846	0.0007982	0.0006858
South Coas	2013	Annual	T7	GAS	Aggregated	40	22385.76846	0.6119225	0.7148409	23.66484	4.8386151	475.23322	470.4808831	0.0006552	0.000563
South Coas	2013	Annual	T7	GAS	Aggregated	45	24002.39889	0.5269328	0.6175161	22.537158	5.0173977	452.05581	447.5352529	0.0005657	0.0004862
South Coas	2013	Annual	T7	GAS	Aggregated	50	21873.95553	0.4708252	0.552678	22.559658	5.2035799	454.32177	449.7785502	0.0005085	0.0004372
South Coas	2013	Annual	T7	GAS	Aggregated	55	21699.80046	0.4436393	0.5222206	23.973991	5.4389415	482.41559	477.5914368	0.0004777	0.0004112
South Coas	2013	Annual	T7	GAS	Aggregated	60	26190.64597	0.4211368	0.5007514	26.611986	5.6757598	541.2092	535.7971078	0.0004618	0.0003975
South Coas	2013	Annual	T7	GAS	Aggregated	65	19063.63933	0.41761	0.4976298	31.437101	5.8453839	641.49792	635.0829367	0.0004589	0.0003947
South Coas	2013	Annual	T7	GAS	Aggregated	70	618.2051525	0.438835	0.5286499	34.912267	5.985132	803.36245	795.3288266	0.0005232	0.0004545
South Coas	2013	Annual	UBUS	GAS	Aggregated	5	1893.884327	6.67992	7.2054543	58.051308	2.7589668	2513.4972	2488.362187	0.015483	0.013736
South Coas	2013	Annual	UBUS	GAS	Aggregated	10	6797.726039	5.3792201	5.8024233	47.026072	2.8288941	2036.1281	2015.766797	0.0124682	0.0110614
South Coas	2013	Annual	UBUS	GAS	Aggregated	15	13595.4516	3.5985948	3.8817096	32.159317	2.9687499	1392.4295	1378.50521	0.008341	0.0073998
South Coas	2013	Annual	UBUS	GAS	Aggregated	20	17941.25732	2.509399	2.7068228	23.235989	3.1086052	1006.0686	996.0078711	0.0058164	0.0051601
South Coas	2013	Annual	UBUS	GAS	Aggregated	25	27020.81877	1.824021	1.9675234	17.737878	3.2484606	768.01209	760.3319651	0.0042278	0.0037508
South Coas	2013	Annual	UBUS	GAS	Aggregated	30	33818.54106	1.3820162	1.4907446	14.306335	3.3883159	619.43362	613.2392837	0.0032033	0.0028419
South Coas	2013	Annual	UBUS	GAS	Aggregated	35	33142.01834	1.0914896	1.1773611	12.191055	3.5281716	527.84656	522.5680903	0.0025299	0.0022444
South Coas	2013	Annual	UBUS	GAS	Aggregated	40	23892.37246	0.8985646	0.969258	10.975905	3.6680271	475.23316	470.4808319	0.0020827	0.0018477
South Coas	2013	Annual	UBUS	GAS	Aggregated	45	10415.40782	0.771085	0.8317491	10.440606	3.8078821	452.05585	447.5352885	0.0017873	0.0015856
South Coas	2013	Annual	UBUS	GAS	Aggregated	50	5291.791929	0.6897289	0.7439924	10.492939	3.9477379	454.3218	449.7785816	0.0015987	0.0014183
South Coas	2013	Annual	UBUS	GAS	Aggregated	55	6560.75219	0.6430988	0.6936939	11.141787	4.0875933	482.41551	477.5913588	0.0014906	0.0013224
South Coas	2013	Annual	UBUS	GAS	Aggregated	60	10738.38215	0.6250293	0.6742026	12.499675	4.2274487	541.20918	535.7970913	0.0014487	0.0012853

SCAB Fleet Average Emission Factors (Diesel)

off-road

Air Basin	SC

		(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)
Equipment	MaxHP	ROG	CO	NOX	SOX	PM	CO2	CH4
Aerial Lifts	15	0.0101	0.0528	0.0633	0.0001	0.0026	8.7	0.0009
	25	0.0160	0.0494	0.0919	0.0001	0.0048	11.0	0.0014
	50	0.0534	0.1694	0.1765	0.0003	0.0142	19.6	0.0048
	120	0.0509	0.2400	0.3531	0.0004	0.0272	38.1	0.0046
	500	0.1106	0.4444	1.3843	0.0021	0.0408	213	0.0100
	750	0.2063	0.8033	2.5864	0.0039	0.0751	385	0.0186
Aerial Lifts Composite		0.0483	0.1877	0.2867	0.0004	0.0184	34.7	0.0044
Air Compressors	15	0.0114	0.0474	0.0697	0.0001	0.0044	7.2	0.0010
	25	0.0247	0.0711	0.1275	0.0002	0.0075	14.4	0.0022
	50	0.0831	0.2446	0.2134	0.0003	0.0201	22.3	0.0075
	120	0.0758	0.3216	0.4682	0.0006	0.0416	47.0	0.0068
	175	0.0984	0.5035	0.7837	0.0010	0.0431	88.5	0.0089
	250	0.0948	0.2873	1.0299	0.0015	0.0316	131	0.0086
	500	0.1543	0.5129	1.5945	0.0023	0.0519	232	0.0139
	750	0.2412	0.7927	2.5509	0.0036	0.0819	358	0.0218
	1000	0.3865	1.2935	4.7637	0.0049	0.1363	486	0.0349
Air Compressors Composite		0.0842	0.3313	0.5635	0.0007	0.0396	63.6	0.0076
Bore/Drill Rigs	15	0.0120	0.0632	0.0754	0.0002	0.0029	10.3	0.0011
	25	0.0193	0.0658	0.1222	0.0002	0.0048	16.0	0.0017
	50	0.0255	0.2253	0.2394	0.0004	0.0095	31.0	0.0023
	120	0.0409	0.4684	0.4254	0.0009	0.0204	77.1	0.0037
	175	0.0671	0.7539	0.6527	0.0016	0.0246	141	0.0061
	250	0.0737	0.3426	0.6140	0.0021	0.0179	188	0.0066
	500	0.1206	0.5512	0.9516	0.0031	0.0294	311	0.0109
	750	0.2388	1.0890	1.8972	0.0062	0.0582	615	0.0215
	1000	0.3889	1.6591	5.4092	0.0093	0.1411	928	0.0351
Bore/Drill Rigs Composite		0.0729	0.5030	0.7136	0.0017	0.0248	165	0.0066
Cement and Mortar	15	0.0074	0.0386	0.0466	0.0001	0.0020	6.3	0.0007
	25	0.0259	0.0794	0.1481	0.0002	0.0078	17.6	0.0023
Cement and Mortar Mixers Comp		0.0089	0.0420	0.0550	0.0001	0.0025	7.2	0.0008
Concrete/Industrial	25	0.0199	0.0678	0.1256	0.0002	0.0048	16.5	0.0018
	50	0.0864	0.2825	0.2750	0.0004	0.0226	30.2	0.0078
	120	0.0978	0.4796	0.6733	0.0009	0.0538	74.1	0.0088
	175	0.1457	0.8685	1.2772	0.0018	0.0645	160	0.0131
Concrete/Industrial Saws Compos		0.0917	0.4031	0.5267	0.0007	0.0413	58.5	0.0083
Cranes	50	0.0932	0.2808	0.2313	0.0003	0.0221	23.2	0.0084
	120	0.0859	0.3587	0.5189	0.0006	0.0453	50.1	0.0078
	175	0.0977	0.4806	0.7306	0.0009	0.0412	80.3	0.0088

	250	0.0979	0.2817	0.9088	0.0013	0.0317	112	0.0088
	500	0.1468	0.4948	1.2979	0.0018	0.0470	180	0.0132
	750	0.2485	0.8312	2.2480	0.0030	0.0803	303	0.0224
	9999	0.9122	3.0993	9.8090	0.0098	0.3001	971	0.0823
Cranes Composite		0.1276	0.4553	1.1066	0.0014	0.0466	129	0.0115
Crawler Tractors	50	0.1094	0.3164	0.2544	0.0003	0.0251	24.9	0.0099
	120	0.1217	0.4814	0.7280	0.0008	0.0627	65.8	0.0110
	175	0.1594	0.7413	1.1857	0.0014	0.0663	121	0.0144
	250	0.1672	0.4797	1.4702	0.0019	0.0562	166	0.0151
	500	0.2420	0.8885	2.0637	0.0025	0.0798	259	0.0218
	750	0.4355	1.5882	3.7861	0.0047	0.1446	465	0.0393
	1000	0.6595	2.5182	7.0047	0.0066	0.2228	658	0.0595
Crawler Tractors Composite		0.1499	0.5767	1.0853	0.0013	0.0644	114	0.0135
Crushing/Proc. Equ	50	0.1559	0.4812	0.4182	0.0006	0.0383	44.0	0.0141
	120	0.1284	0.5703	0.8000	0.0010	0.0704	83.1	0.0116
	175	0.1801	0.9583	1.4195	0.0019	0.0782	167	0.0163
	250	0.1744	0.5287	1.8241	0.0028	0.0562	245	0.0157
	500	0.2480	0.8092	2.4341	0.0037	0.0801	374	0.0224
	750	0.3929	1.2625	3.9931	0.0059	0.1283	589	0.0354
	9999	1.0512	3.3574	12.4161	0.0131	0.3572	1,308	0.0948
Crushing/Proc. Equipment Compo		0.1597	0.6651	1.0867	0.0015	0.0677	132	0.0144
Dumpers/Tenders	25	0.0095	0.0317	0.0595	0.0001	0.0027	7.6	0.0009
Dumpers/Tenders Composite		0.0095	0.0317	0.0595	0.0001	0.0027	7.6	0.0009
Excavators	25	0.0198	0.0677	0.1253	0.0002	0.0047	16.4	0.0018
	50	0.0728	0.2757	0.2354	0.0003	0.0189	25.0	0.0066
	120	0.0998	0.5137	0.6331	0.0009	0.0519	73.6	0.0090
	175	0.1134	0.6660	0.8323	0.0013	0.0457	112	0.0102
	250	0.1180	0.3480	1.0099	0.0018	0.0333	159	0.0106
	500	0.1657	0.5102	1.3127	0.0023	0.0463	234	0.0149
	750	0.2764	0.8452	2.2503	0.0039	0.0782	387	0.0249
Excavators Composite		0.1143	0.5289	0.8299	0.0013	0.0428	120	0.0103
Forklifts	50	0.0381	0.1569	0.1376	0.0002	0.0106	14.7	0.0034
	120	0.0390	0.2158	0.2571	0.0004	0.0206	31.2	0.0035
	175	0.0524	0.3311	0.3883	0.0006	0.0214	56.1	0.0047
	250	0.0542	0.1595	0.4606	0.0009	0.0149	77.1	0.0049
	500	0.0752	0.2182	0.5845	0.0011	0.0206	111	0.0068
Forklifts Composite		0.0497	0.2215	0.3551	0.0006	0.0178	54.4	0.0045
Generator Sets	15	0.0142	0.0670	0.0971	0.0002	0.0054	10.2	0.0013
	25	0.0256	0.0868	0.1557	0.0002	0.0085	17.6	0.0023
	50	0.0785	0.2545	0.2731	0.0004	0.0213	30.6	0.0071
	120	0.1008	0.4857	0.7130	0.0009	0.0537	77.9	0.0091
	175	0.1236	0.7367	1.1536	0.0016	0.0538	142	0.0112
	250	0.1181	0.4248	1.5252	0.0024	0.0422	213	0.0107
	500	0.1683	0.6904	2.1655	0.0033	0.0627	337	0.0152
	750	0.2811	1.1145	3.6123	0.0055	0.1032	544	0.0254
	9999	0.7280	2.5702	9.5914	0.0105	0.2595	1,049	0.0657

Generator Sets Composite		0.0702	0.2974	0.5083	0.0007	0.0296	61.0	0.0063
Graders	50	0.0985	0.3168	0.2668	0.0004	0.0239	27.5	0.0089
	120	0.1166	0.5268	0.7270	0.0009	0.0614	75.0	0.0105
	175	0.1386	0.7331	1.0511	0.0014	0.0577	124	0.0125
	250	0.1407	0.4177	1.2844	0.0019	0.0445	172	0.0127
	500	0.1759	0.5992	1.5242	0.0023	0.0550	229	0.0159
	750	0.3746	1.2665	3.3218	0.0049	0.1182	486	0.0338
Graders Composite		0.1362	0.5987	1.0796	0.0015	0.0539	133	0.0123
Off-Highway Tracto	120	0.2008	0.7118	1.1800	0.0011	0.1014	93.7	0.0181
	175	0.1960	0.8272	1.4624	0.0015	0.0820	130	0.0177
	250	0.1564	0.4499	1.3527	0.0015	0.0560	130	0.0141
	750	0.6254	2.6908	5.4422	0.0057	0.2197	568	0.0564
	1000	0.9416	4.2058	9.6214	0.0082	0.3259	814	0.0850
Off-Highway Tractors Composite		0.1986	0.7438	1.6111	0.0017	0.0767	151	0.0179
Off-Highway Trucks	175	0.1355	0.7569	0.9614	0.0014	0.0539	125	0.0122
	250	0.1326	0.3761	1.1048	0.0019	0.0368	167	0.0120
	500	0.2065	0.6134	1.5945	0.0027	0.0567	272	0.0186
	750	0.3371	0.9944	2.6748	0.0044	0.0937	442	0.0304
	1000	0.5191	1.5673	5.5862	0.0063	0.1665	625	0.0468
Off-Highway Trucks Composite		0.2034	0.6148	1.6679	0.0027	0.0579	260	0.0183
Other Construction	15	0.0118	0.0617	0.0737	0.0002	0.0029	10.1	0.0011
	25	0.0160	0.0544	0.1010	0.0002	0.0039	13.2	0.0014
	50	0.0670	0.2573	0.2471	0.0004	0.0183	28.0	0.0060
	120	0.0915	0.5237	0.6571	0.0009	0.0503	80.9	0.0083
	175	0.0868	0.5867	0.7476	0.0012	0.0374	107	0.0078
	500	0.1379	0.5080	1.3457	0.0025	0.0441	254	0.0124
Other Construction Equipment Co		0.0820	0.3697	0.7168	0.0013	0.0296	123	0.0074
Other General Indu	15	0.0066	0.0391	0.0466	0.0001	0.0018	6.4	0.0006
	25	0.0185	0.0632	0.1170	0.0002	0.0044	15.3	0.0017
	50	0.0878	0.2626	0.2155	0.0003	0.0211	21.7	0.0079
	120	0.1082	0.4435	0.6351	0.0007	0.0583	62.0	0.0098
	175	0.1174	0.5703	0.8698	0.0011	0.0498	95.9	0.0106
	250	0.1111	0.3089	1.0899	0.0015	0.0346	136	0.0100
	500	0.2032	0.6064	1.8639	0.0026	0.0630	265	0.0183
	750	0.3375	0.9995	3.1813	0.0044	0.1061	437	0.0305
	1000	0.4892	1.5297	5.6194	0.0056	0.1666	560	0.0441
Other General Industrial Equipme		0.1448	0.4985	1.2360	0.0016	0.0527	152	0.0131
Other Material Han	50	0.1219	0.3632	0.2997	0.0004	0.0293	30.3	0.0110
	120	0.1051	0.4319	0.6201	0.0007	0.0568	60.7	0.0095
	175	0.1481	0.7226	1.1054	0.0014	0.0631	122	0.0134
	250	0.1174	0.3291	1.1643	0.0016	0.0368	145	0.0106
	500	0.1448	0.4365	1.3440	0.0019	0.0453	192	0.0131
	9999	0.6617	2.0216	7.4315	0.0073	0.2197	741	0.0597
Other Material Handling Equipme		0.1381	0.4814	1.2068	0.0015	0.0511	141	0.0125
Pavers	25	0.0239	0.0788	0.1472	0.0002	0.0070	18.7	0.0022
	50	0.1281	0.3506	0.2860	0.0004	0.0289	28.0	0.0116

	120	0.1311	0.5011	0.7948	0.0008	0.0682	69.2	0.0118
	175	0.1695	0.7742	1.3079	0.0014	0.0720	128	0.0153
	250	0.1962	0.5822	1.8076	0.0022	0.0696	194	0.0177
	500	0.2165	0.8647	1.9551	0.0023	0.0756	233	0.0195
Pavers Composite		0.1429	0.5277	0.8112	0.0009	0.0564	77.9	0.0129
Paving Equipment	25	0.0152	0.0520	0.0965	0.0002	0.0038	12.6	0.0014
	50	0.1094	0.2974	0.2439	0.0003	0.0247	23.9	0.0099
	120	0.1028	0.3923	0.6241	0.0006	0.0538	54.5	0.0093
	175	0.1323	0.6049	1.0274	0.0011	0.0565	101	0.0119
	250	0.1207	0.3595	1.1333	0.0014	0.0429	122	0.0109
Paving Equipment Composite		0.1082	0.4273	0.7312	0.0008	0.0502	68.9	0.0098
Plate Compactors	15	0.0050	0.0263	0.0314	0.0001	0.0012	4.3	0.0005
Plate Compactors Composite		0.0050	0.0263	0.0314	0.0001	0.0012	4.3	0.0005
Pressure Washers	15	0.0068	0.0321	0.0465	0.0001	0.0026	4.9	0.0006
	25	0.0104	0.0352	0.0631	0.0001	0.0035	7.1	0.0009
	50	0.0281	0.1001	0.1230	0.0002	0.0085	14.3	0.0025
	120	0.0274	0.1429	0.2101	0.0003	0.0143	24.1	0.0025
Pressure Washers Composite		0.0145	0.0603	0.0838	0.0001	0.0053	9.4	0.0013
Pumps	15	0.0117	0.0488	0.0716	0.0001	0.0045	7.4	0.0011
	25	0.0333	0.0959	0.1721	0.0002	0.0101	19.5	0.0030
	50	0.0949	0.3004	0.3098	0.0004	0.0251	34.3	0.0086
	120	0.1049	0.4934	0.7241	0.0009	0.0563	77.9	0.0095
	175	0.1275	0.7382	1.1562	0.0016	0.0556	140	0.0115
	250	0.1175	0.4096	1.4689	0.0023	0.0416	201	0.0106
	500	0.1815	0.7226	2.2468	0.0034	0.0667	345	0.0164
	750	0.3092	1.1947	3.8390	0.0057	0.1124	571	0.0279
	9999	0.9669	3.3910	12.5393	0.0136	0.3422	1,355	0.0872
Pumps Composite		0.0683	0.2873	0.4427	0.0006	0.0295	49.6	0.0062
Rollers	15	0.0074	0.0386	0.0461	0.0001	0.0018	6.3	0.0007
	25	0.0161	0.0549	0.1019	0.0002	0.0040	13.3	0.0015
	50	0.0947	0.2831	0.2492	0.0003	0.0226	26.0	0.0085
	120	0.0921	0.4030	0.5906	0.0007	0.0494	59.0	0.0083
	175	0.1178	0.6182	0.9537	0.0012	0.0510	108	0.0106
	250	0.1180	0.3717	1.2002	0.0017	0.0407	153	0.0106
	500	0.1555	0.5926	1.5340	0.0022	0.0537	219	0.0140
Rollers Composite		0.0912	0.4018	0.6164	0.0008	0.0419	67.1	0.0082
Rough Terrain Fork	50	0.1055	0.3654	0.3185	0.0004	0.0271	33.9	0.0095
	120	0.0877	0.4292	0.5612	0.0007	0.0474	62.4	0.0079
	175	0.1265	0.7246	0.9750	0.0014	0.0534	125	0.0114
	250	0.1230	0.3717	1.1633	0.0019	0.0376	171	0.0111
	500	0.1745	0.5501	1.5313	0.0025	0.0529	257	0.0157
Rough Terrain Forklifts Composite		0.0929	0.4608	0.6101	0.0008	0.0477	70.3	0.0084
Rubber Tired Doze	175	0.2034	0.8392	1.4854	0.0015	0.0841	129	0.0183
	250	0.2322	0.6560	1.9517	0.0021	0.0821	183	0.0209
	500	0.3072	1.3307	2.5592	0.0026	0.1058	265	0.0277
	750	0.4633	1.9954	3.9201	0.0040	0.1603	399	0.0418

	1000	0.7196	3.2150	7.1336	0.0060	0.2458	592	0.0649
Rubber Tired Dozers Composite		0.2854	1.1058	2.3867	0.0025	0.0993	239	0.0257
Rubber Tired Load	25	0.0204	0.0697	0.1291	0.0002	0.0049	16.9	0.0018
	50	0.1092	0.3535	0.3000	0.0004	0.0266	31.1	0.0099
	120	0.0902	0.4119	0.5654	0.0007	0.0477	58.9	0.0081
	175	0.1168	0.6261	0.8915	0.0012	0.0489	106	0.0105
	250	0.1186	0.3553	1.0966	0.0017	0.0375	149	0.0107
	500	0.1769	0.6085	1.5507	0.0023	0.0554	237	0.0160
	750	0.3648	1.2450	3.2733	0.0049	0.1153	486	0.0329
	1000	0.4927	1.7350	5.6204	0.0060	0.1686	594	0.0445
Rubber Tired Loaders Composite		0.1122	0.4683	0.8620	0.0012	0.0461	109	0.0101
Scrapers	120	0.1770	0.6882	1.0571	0.0011	0.0913	93.9	0.0160
	175	0.1973	0.9065	1.4751	0.0017	0.0824	148	0.0178
	250	0.2135	0.6146	1.8936	0.0024	0.0726	209	0.0193
	500	0.3033	1.1355	2.6139	0.0032	0.1012	321	0.0274
	750	0.5260	1.9562	4.6194	0.0056	0.1767	555	0.0475
Scrapers Composite		0.2648	0.9890	2.2371	0.0027	0.0928	262	0.0239
Signal Boards	15	0.0072	0.0377	0.0450	0.0001	0.0018	6.2	0.0006
	50	0.1035	0.3331	0.3273	0.0005	0.0269	36.2	0.0093
	120	0.1072	0.5163	0.7320	0.0009	0.0584	80.2	0.0097
	175	0.1415	0.8317	1.2462	0.0017	0.0621	155	0.0128
	250	0.1520	0.5213	1.8056	0.0029	0.0525	255	0.0137
Signal Boards Composite		0.0181	0.0929	0.1332	0.0002	0.0071	16.7	0.0016
Skid Steer Loaders	25	0.0195	0.0610	0.1145	0.0002	0.0059	13.8	0.0018
	50	0.0443	0.2196	0.2161	0.0003	0.0134	25.5	0.0040
	120	0.0380	0.2727	0.3020	0.0005	0.0205	42.8	0.0034
Skid Steer Loaders Composite		0.0406	0.2262	0.2369	0.0004	0.0152	30.3	0.0037
Surfacing Equipme	50	0.0442	0.1367	0.1310	0.0002	0.0110	14.1	0.0040
	120	0.0904	0.4182	0.6174	0.0007	0.0477	63.8	0.0082
	175	0.0842	0.4716	0.7317	0.0010	0.0363	85.8	0.0076
	250	0.0955	0.3237	1.0228	0.0015	0.0341	135	0.0086
	500	0.1433	0.6069	1.5156	0.0022	0.0516	221	0.0129
	750	0.2284	0.9503	2.4407	0.0035	0.0820	347	0.0206
Surfacing Equipment Composite		0.1194	0.4930	1.1688	0.0017	0.0427	166	0.0108
Sweepers/Scrubbe	15	0.0124	0.0729	0.0870	0.0002	0.0034	11.9	0.0011
	25	0.0237	0.0808	0.1495	0.0002	0.0057	19.6	0.0021
	50	0.0911	0.3300	0.2939	0.0004	0.0241	31.6	0.0082
	120	0.0991	0.5098	0.6481	0.0009	0.0543	75.0	0.0089
	175	0.1317	0.7996	1.0280	0.0016	0.0561	139	0.0119
	250	0.1086	0.3327	1.0406	0.0018	0.0325	162	0.0098
Sweepers/Scrubbers Composite		0.1029	0.5086	0.6353	0.0009	0.0447	78.5	0.0093
Tractors/Loaders/B	25	0.0193	0.0654	0.1228	0.0002	0.0052	15.9	0.0017
	50	0.0792	0.3103	0.2765	0.0004	0.0211	30.3	0.0071
	120	0.0634	0.3503	0.4252	0.0006	0.0337	51.7	0.0057
	175	0.0924	0.5857	0.7161	0.0011	0.0380	101	0.0083
	250	0.1142	0.3608	1.0294	0.0019	0.0330	172	0.0103

	500	0.2186	0.7245	1.8255	0.0039	0.0627	345	0.0197
	750	0.3304	1.0864	2.8317	0.0058	0.0958	517	0.0298
Tractors/Loaders/Backhoes Comp		0.0728	0.3747	0.4977	0.0008	0.0341	66.8	0.0066
Trenchers	15	0.0099	0.0517	0.0617	0.0001	0.0024	8.5	0.0009
	25	0.0397	0.1355	0.2509	0.0004	0.0095	32.9	0.0036
	50	0.1477	0.3990	0.3332	0.0004	0.0333	32.9	0.0133
	120	0.1212	0.4640	0.7489	0.0008	0.0629	64.9	0.0109
	175	0.1864	0.8579	1.4773	0.0016	0.0798	144	0.0168
	250	0.2226	0.6786	2.0933	0.0025	0.0813	223	0.0201
	500	0.2835	1.2125	2.6464	0.0031	0.1024	311	0.0256
	750	0.5377	2.2784	5.0912	0.0059	0.1947	587	0.0485
Trenchers Composite		0.1350	0.4606	0.6384	0.0007	0.0517	58.7	0.0122
Welders	15	0.0098	0.0408	0.0599	0.0001	0.0038	6.2	0.0009
	25	0.0193	0.0555	0.0996	0.0001	0.0058	11.3	0.0017
	50	0.0886	0.2652	0.2435	0.0003	0.0219	26.0	0.0080
	120	0.0601	0.2632	0.3850	0.0005	0.0328	39.5	0.0054
	175	0.1021	0.5438	0.8502	0.0011	0.0448	98.2	0.0092
	250	0.0801	0.2545	0.9129	0.0013	0.0274	119	0.0072
	500	0.1028	0.3644	1.1332	0.0016	0.0359	168	0.0093
Welders Composite		0.0589	0.2041	0.2436	0.0003	0.0206	25.6	0.0053

Karman K-max

Powerplant shaft horsepower =	1500
Mean operation power =	80%
Operating shaft horsepower =	1200
Fuel Flow (kilograms per second) =	0.078851783
Fuel Flow (kilograms per hour) =	283.8664194
Fuel Flow (gallons/hour) =	91.49296904

Emission Factors (g/kg)

NOx =	11.82907
ROG =	1.803541
CO =	2.162346
PM =	0.320448

Emission Factors (lb/hour)

NOx =	7.402726
ROG =	1.12867
CO =	1.353213
PM =	0.200539

CO2 Emissions

	9.57 kg/gallon
lb/hour	1930.321

http://www.eia.gov/oiaf/1605/coefficients.html

Hughes 500 E Helicopter

Powerplant shaft horsepower =	420
Mean operation power =	80%
Operating shaft horsepower =	336
Fuel Flow (kilograms per second) =	0.031188
Fuel Flow (kilograms per hour) =	112.2766
Fuel Flow (gallons/hour) =	36.18788

Emission Factors (g/kg)

NOx =	5.742517
ROG =	7.132645
CO =	8.883413
PM =	0.179692

Emission Factors (lb/hour)

NOx =	1.421408
ROG =	1.765497
CO =	2.198853
PM =	0.044478

CO2 Emissions

	9.57 kg/gallon
lb/hour	763.4927

Bell 212

Powerplant shaft horsepower =	1800
Mean operation power =	80%
Operating shaft horsepower =	1440
Fuel Flow (kilograms per second) =	0.089816
Fuel Flow (kilograms per hour) =	323.3384
Fuel Flow (gallons/hour) =	104.2152

Emission Factors (g/kg)

NOx =	13.11903
ROG =	1.481161
CO =	1.766176
PM =	0.346829

Emission Factors (lb/hour)

NOx =	9.351604
ROG =	1.055812
CO =	1.258978
PM =	0.247229

CO2 Emissions

	9.57 kg/gallon
lb/hour	2198.734

Operational SF6

GHG emissions associated with SF6 leakage:

E = L/100 x MSF6 x 23,200 x 4.536 x 10-4

where:

E = GHG emissions from SF6 leakage (metric tons CO2 equivalent per year)
L = SF6 leakage rate (%/yr) = 0.5
MSF6 = Total "weight" of SF6 in new circuit breaker (lb.) = 155
SF6 global warming potential = 23,900
Conversion factor for metric tons per pound = 0.000454
Number of Circuit Breakers = 3

E= 25.20542

Fugitive Dust per acre

Fugitive Dust Clearing Parameters

Silt Content[a]	Moisture Content[a]	Hours/day
6.9	7.9	8

Equation:

Clearing[b]: PM10 Emissions (lb/day) = 0.75 x (silt content$^{1.5}$)/(moisture content$^{1.4}$) x hours operated (hr/day) x (1 - control efficiency)

PM10 lb/day	PM2.5 lb/day
6.02	1.3

Fugitive Dust Stockpiling Parameters

Silt Content[a]	Precipitation Days[c]	Mean Wind Speed Percent[d]	TSP Fraction	Area[e] (acres)
6.9	10	100	0.5	0.1

Equation:

Storage Piles[f]: PM10 Emissions (lb/day) = 1.7 x (silt content/1.5) x ((365-precipitation days)/235) x wind speed percent/15 x TSP fraction x Area) x (1 - control efficiency)

PM10 lb/day	PM2.5 lb/day
3.94	0.8

Total Fugitive Dust

PM10 lb/day	PM2.5 lb/day
9.96	2.09

a) USEPA, AP-42, July 1998, Table 11.9-3 Typical Values for Correction Factors Applicable to the Predictive Emission Factor Equations

b) USEPA, AP-42, July 1998, Table 11.9-1, Equation for bulldozer, overburden, ≤ 10 μm

c) Table A9-9-E2, SCAQMD CEQA Air Quality Handbook, 1993

d) Mean wind speed percent - percent of time mean wind speed exceeds 12 mph

e) Assumed storage piles are 0.1 acres in size

f) USEPA, AP-42, Jan 1995, Section 13.2.4 Aggregate Handling and Storage Piles, Equation 1

Appendix 7.
Biological Resources

Appendix 7

Biological Resources

Biological Resources Figures

Tables of Special Status Plants and Wildlife

Appendix 7: Tables of Special Status Plants and Wildlife

Table Ap.7-1 and Table Ap.7-2 list the conservation status and habitat descriptions of special-status plant and wildlife species known from or potentially occurring in the Project Study Area. For species not observed during surveys, the potential for their occurrence was determined by biologists knowledgeable about each species based on the species' habitat requirements, range (including elevation), and previously recorded observations within the region.

The following criteria were used to determine the potential for each species to occur along the Proposed Project route:

- **Present:** Species was observed within the Project Study Area during biological surveys.
- **High:** Suitable habitat is present and there is a documented occurrence of the species within the proposed route or its vicinity (approximately five miles).
- **Moderate:** Either suitable habitat is present, or there is a documented occurrence of the species within the vicinity of the proposed route (approximately five miles).
- **Low:** No documented occurrences of the species exist within the proposed route or vicinity (approximately five miles) or no marginally suitable habitat is present along the route, or both.
- **Not Likely to Occur:** Species was not observed during field surveys, no documented occurrences along the route, and the species is restricted to habitat conditions that do not occur along the proposed route.

Habitat conditions include soil type, elevation range, vegetation, and other factors relevant to each species. The criteria are general guidelines and a species' potential for occurrence may be modified based on biological analysis of habitat quality, isolation, and other factors.

Table Ap.7-1. Special-Status Plant Species Occurring or Potentially Occurring in the Project Area

Species	Status	Habitat and Distribution	Flowering Period	Occurrence Probability
Abronia villosa var. *aurita* Chaparral sand-verbena	FED: None CA: None CRPR: 1B.1 BLM: S MSHCP: None	Annual or perennial herb. Sandy areas in chaparral and coastal sage scrub, alluvial fans and benches, and desert dunes or other sandy areas, 250 to 5,300 feet elevation. In California, reported from Riverside, San Diego, Imperial, Los Angeles, and Ventura Counties. Believed extirpated from Orange County. Also reported from Arizona and Mexico (Baja California).	Jan–Sep, mostly Mar-Aug	**Segment 1 – 3: Not likely to occur.** Suitable habitat potentially present, but no documented occurrences within 5 miles of the ROW (CNDDB, 2014) and not observed during botanical surveys in 2012 and 2013 (BRC, 2013). **Segment 4 – 5: High.** Suitable habitat present and documented occurrences within 5 miles of the ROW (CNDDB, 2014), but not observed during botanical surveys in 2012 and 2013 (BRC, 2013). **Segment 6: Present.** Observed in Whitewater Canyon during botanical surveys (BRC, 2013).
Allium marvinii Yucaipa onion	FED: None CA: None CRPR: 1B.1 BLM: S MSHCP: WRS	Perennial herb. Openings in clay soils in chaparral. Known only from the Yucaipa and Beaumont areas; 2,500 to 3,500 feet elevation.	Apr–May	**Segment 1 – 2: Not likely to occur.** Outside known range, no documented occurrences within 5 miles of the ROW (CNDDB, 2014). **Segment 3: Low.** Probably outside species range, not observed during botanical surveys (BRC, 2013). **Segment 4: Present.** Observed during botanical surveys (BRC, 2013). **Segment 5 – 6: Not likely to occur.** Outside known range, no documented occurrences within 5 miles of the ROW (CNDDB, 2014).
Astragalus lentiginosus var. coachellae Coachella Valley milk-vetch	FED: **END** CA: None CRPR: 1B.2 BLM: None MSHCP: CV	Annual or perennial herb. Sandy flats, washes, outwash fans, and dunes in Sonoran desert scrub, Cabazon to Indio, 100 to 2,200 feet elevation. Nearest documented occurrences were in 1904 at "Banning" (CNDDB #54) and in recent years along Highway 111 and the adjacent foothills (CNDDB #15, #49, and #50) about a mile south of the ROW. Not known from portions of the Whitewater River or other washes within or upstream of the ROW. Observed along the ROW just west of Devers Substation (Aspen, 2006).	Feb–May	**Segment 1 – 4: Not likely to occur.** Outside known range and no suitable habitat. **Segment 5: Moderate.** Suitable habitat potentially present, and documented occurrences within 5 miles of the ROW (CNDDB, 2014). Not observed during botanical surveys in 2012 and 2013 (BRC, 2013). **Segment 6: High.** Documented along the ROW just west of Devers Substation (Aspen, 2006), but not observed during botanical surveys in 2012 and 2013 (BRC, 2013).

Table Ap.7-1. Special-Status Plant Species Occurring or Potentially Occurring in the Project Area

Species	Status		Habitat and Distribution	Flowering Period	Occurrence Probability
Astragalus pachypus var. jaegeri Jaeger's milk-vetch	FED: CA: CRPR: BLM: MSHCP:	None None 1B.1 S WRC	Perennial shrub. Coastal scrub, chaparral, valley and foothill grassland, cismontane woodland on dry ridges and valleys and open sandy slopes; often in grassland and oak chaparral; 1,200 to 3,000 feet elevation. Nearest documented occurrences were in 1897 at "Beaumont" (CNDDB #15), in 1904 at "Banning' (CNDDB #15), and in 1989 in a canyon west of Potrero Creek (CNDDB #3) about 1.6 mile south of the ROW. The Potrero Creek occurrence was observed in 2011.	Dec-Jun	**Segment 1 – 3: Not likely to occur.** Suitable habitat potentially present, but no documented occurrences within 5 miles of the ROW (CNDDB, 2014), and not observed during botanical surveys in 2012 and 2013 (BRC, 2013). **Segment 4: Moderate.** Suitable habitat present on the ROW. Documented occurrences within 5 miles of the ROW (CNDDB, 2014), but not observed during botanical surveys in 2012 and 2013 (BRC, 2013). **Segment 5 – 6: Not likely to occur.** Suitable habitat probably absent and no documented occurrences within 5 miles of the ROW (CNDDB, 2014).
Astragalus tricarinatus Triple-ribbed milk-vetch	FED: CA: CRPR: BLM: MSHCP:	**END** None 1B.2 None CV	Perennial herb. Joshua tree woodland, Sonoran desert scrub on hot, rocky slopes in canyons and along edge of boulder-strewn desert washes; 1,470 to 3,900 feet elevation. Nearest documented occurrences were in 2009 on a ridge east of the Whitewater River (CNDDB #18), about a mile north of the ROW, and in the Whitewater River wash, possibly within the ROW, the most recent being a single immature plant observed in 1995 (CNDDB #3). Plants observed in the wash were likely waifs washed down from more typical habitat in the foothills of the San Bernardino Mountains.	Feb–May	**Segment 1 – 4: Not likely to occur.** Outside known range and no suitable habitat. **Segment 5: Low.** Suitable habitat present, no documented occurrences within 5 miles of the ROW (CNDDB, 2014). **Segment 6: High.** Suitable habitat present on the ROW, documented occurrences within 5 miles of the ROW (CNDDB, 2014) and individuals (probably waifs) documented in or near the proposed ROW in the Whitewater River wash (CNDDB, 2014). Not observed during botanical surveys in 2012 and 2013 (BRC, 2013).

Table Ap.7-1. Special-Status Plant Species Occurring or Potentially Occurring in the Project Area

Species	Status	Habitat and Distribution	Flowering Period	Occurrence Probability
Berberis nevinii Nevin's barberry	FED: **END** CA: **END** CRPR: 1B.1 BLM: None MSHCP: WRC	Perennial evergreen shrub. Sandy or gravelly areas in chaparral, cismontane woodland, coastal scrub, and riparian scrub, 900 to 2,700 feet, on steep, north-facing slopes or in low grade sandy washes. Discontinuous distribution in southern California. Occurrences in and near San Timoteo Canyon reported as recently as 2009 (Calflora, 2014). Historic occurrences appear to be located within the ROW, but may have been extirpated (BRC, 2013). CNDDB Occurrence #4 (San Timoteo Canyon) – three individuals reported extant in 2009 (CCH, 2014; USFWS, 2009). CNDDB Occurrence #5 (Scott Canyon) – one individual reported in the 1990s (date not specified), report noted that the plant was recently burned (CNDDB, 2014; USFWS, 2009). However, the species is fire-adapted and capable of resprouting after being burned (USFS, 2012). CNDDB Occurrence #40 (Pilgrim Road) – population reported as extirpated in 2006 (USFWS, 2009).	Mar–Jun	**Segment 1 – 2: Moderate.** Potentially suitable habitat present. Documented occurrences nearby in Segment 3 (CNDDB, 2014; occurrence near San Bernardino Junction (CNDDB #5) is considered to be on Segment 3). Not observed during botanical surveys in 2012 and 2013 (BRC, 2013). **Segment 3: High.** Documented occurrences on or near the ROW as recently as 2009 (CNDDB, 2014; Calflora, 2014; USFWS, 2009), but not observed during botanical surveys in 2012 and 2013 (BRC, 2013). **Segment 4: Low.** Limited suitable habitat and no documented occurrences within 5 miles of the ROW (CNDDB, 2014). **Segment 5 – 6: Not likely to occur.** Suitable habitat probably absent and no documented occurrences within 5 miles of the ROW (CNDDB, 2014).

Table Ap.7-1. Special-Status Plant Species Occurring or Potentially Occurring in the Project Area

Species	Status		Habitat and Distribution	Flowering Period	Occurrence Probability
Calochortus plummerae Plummer's mariposa-lily	FED: CA: CRPR: BLM: MSHCP:	None None 4.2 None WRP	Perennial bulbiferous herb. Sandy or rocky sites of (usually) granitic or alluvial material in valley and foothill grassland, coastal scrub, chaparral, cismontane woodland, and lower montane coniferous forest at 300 to 5,600 feet elevation. Known from the Santa Monica Mountains to San Jacinto Mountains in Riverside, San Bernardino, Orange, Los Angeles, and Ventura Counties, California. In the western Riverside County area, this species is known from the foothills of the San Bernardino Mountains, northeastern Santa Ana Mountains, Box Springs Mountains, and from the Lake Skinner area (Roberts et al., 2004).	May–Jul	**Segment 1: Not likely to occur.** Suitable habitat potentially present, but no documented occurrences within 5 miles of the ROW (CNDDB, 2014), and not observed during botanical surveys in 2012 and 2013 (BRC, 2013). **Segment 2: Low.** Suitable habitat potentially present, documented occurrences over 4 miles south of the ROW (GANDA, 2011), and not observed during botanical surveys in 2012 and 2013 (BRC, 2013). **Segment 3 – 4: Present.** *Calochortus* observed during surveys were likely this species, but identification could not be definitively determined (BRC, 2013). Documented occurrence near El Casco (SCE, 2007). **Segment 5: Moderate.** Suitable habitat limited. One documented occurrence in the hills about three miles north of the proposed ROW. Not observed during botanical surveys in 2012 and 2013 (BRC, 2013). **Segment 6: Not likely to occur.** No suitable habitat, no documented occurrences within 5 miles of the ROW (CNDDB, 2014), and not observed during botanical surveys in 2012 and 2013 (BRC, 2013).
Caulanthus simulans Payson's jewelflower	FED: CA: CRPR: BLM: MSHCP:	None None 4.2 None WRC	Annual herb. Found in rocky or sandy, granitic soils of chaparral, coastal scrub, and pinyon-juniper woodland habitats at elevations between 300 and 7,200 feet. Project is just outside known range of the species, which reaches its northern limit in the San Jacinto Mountains. Nearest recorded occurrence was in 1968 near Highway 243 (CNDDB #35), about 0.4 to 1.2 miles southeast of the ROW. Often found in burned areas; can be very common after fire.	Feb–Jun	**Segment 1 – 3: Low.** Suitable habitat present on the proposed ROW, but outside known range and not observed during botanical surveys in 2012 and 2013 (BRC, 2013). **Segment 4: Moderate.** Potentially suitable habitat present, including recent burn area (Summit Fire, May 2013) in small section of proposed ROW at east end of Segment 4 (SCE, 2013). Not observed during botanical surveys in 2012 and 2013 (BRC, 2013). **Segment 5: Moderate.** Potentially suitable habitat present and documented occurrence near the proposed ROW (CNDDB, 2014). Not observed during botanical surveys in 2012 and 2013 (BRC, 2013). **Segment 6: Low.** Outside known range, no documented occurrences (CNDDB, 2014). Not observed during botanical surveys in 2012 and 2013 (BRC, 2013).

Table Ap.7-1. Special-Status Plant Species Occurring or Potentially Occurring in the Project Area

Species	Status	Habitat and Distribution	Flowering Period	Occurrence Probability
Centromadia pungens ssp. laevis Smooth tarplant	FED: None CA: None CRPR: 1B.1 BLM: S MSHCP: WRS	Annual herb. Alkaline areas in chenopod scrub, meadows, playas, riparian woodland, valley and foothill grassland below 1,600 feet elevation. Known from Riverside and San Bernardino Counties, extirpated from San Diego County.	Apr–Nov	**Segment 1 – 2: Low.** Potentially suitable habitat present, documented occurrences within 5 miles of the ROW (GANDA, 2011). Not observed during botanical surveys in 2012 and 2013 (BRC, 2013). **Segment 3 – 4: Present.** Found along San Timoteo Creek near El Casco Substation within the Project Study Area (Aspen, 2007). **Segment 5 – 6: Not likely to occur.** Potentially suitable habitat probably absent, no documented occurrences within 5 miles of the ROW (CNDDB, 2014), and not observed during botanical surveys in 2012 and 2013 (BRC, 2013).
Chorizanthe parryi var. parryi Parry's spineflower	FED: None CA: None CRPR: 1B.1 BLM: S MSHCP: WRP	Annual herb. Sandy or rocky soils in chaparral, coastal scrub, or woodlands at 100 to 5,600 feet elevation. Known only from Los Angeles, Riverside, and San Bernardino Counties.	Apr–June	**Segment 1 – 4: Moderate.** Suitable habitat potentially present and documented occurrences within 5 miles of the ROW (CNDDB, 2014). Not observed during botanical surveys in 2012 and 2013 (BRC, 2013). **Segment 5 – 6: Present.** Found within the Morongo Reservation (BRC, 2003; LSA, 2010) and other desert portions of the Project Study Area (GANDA, 2011).
Chorizanthe polygonoides var. longispina Long-spined spineflower	FED: None CA: None CRPR: 1B.2 BLM: S MSHCP: WRC	Annual herb. Chaparral, coastal scrub, meadows, valley and foothill grassland on gabbroic clay at 100 to 5,020 feet elevation. Project is outside known range of the species. Nearest recorded occurrence was in 1980 near Perris (CNDDB #18), about 13 miles south of the ROW.	Apr-Jun	**Segment 1 – 5: Low.** Suitable habitat present on the ROW, but project is outside known range of species. Not observed during botanical surveys in 2012 and 2013 (BRC, 2013). **Segment 6: Not likely to occur.** Suitable habitat probably absent, no documented occurrences within 5 miles of the ROW (CNDDB, 2014), and not observed during botanical surveys in 2012 and 2013 (BRC, 2013).
Chorizanthe xanti var. leucotheca White-bracted spineflower	FED: None CA: None CRPR: 1B.2 BLM: S MSHCP: None	Annual herb. Sandy to gravelly places, generally in Mojave desert scrub and pinyon and juniper woodland at 900 to 4,000 feet elevation. Reported from Los Angeles, Riverside, and San Bernardino Counties (Roberts et al., 2004). Mostly localized in the eastern San Bernardino Mountains of San Bernardino County and on the eastern slopes of San Jacinto Mountains in Riverside County.	Apr–Jun	**Segment 1 – 4: Not likely to occur.** Suitable habitat probably absent, nearest documented occurrence is in San Gorgonio River wash on Segment 5 (GANDA, 2011). Not observed during botanical surveys in 2012 and 2013 (BRC, 2013). **Segment 5 – 6: Present.** Near Cabazon and Whitewater River (BRC, 2003), within the Morongo Reservation (LSA, 2010), and between Banning and Whitewater (GANDA, 2011; BRC, 2013).

Table Ap.7-1. Special-Status Plant Species Occurring or Potentially Occurring in the Project Area

Species	Status		Habitat and Distribution	Flowering Period	Occurrence Probability
Deinandra mohavensis Mojave tarplant	FED: CA: CRPR: BLM: MSHCP:	None **END** 1B.3 S WRC	Annual herb. Chaparral, coastal scrub, riparian scrub on mesic sites at 2,100 to 5,250 feet elevation. In southern California this species is mostly limited to the San Jacinto Mountains and northern San Diego County. Nearest recorded occurrence was in 1924 along Highway 243 (CNDDB #2), about 0.7 miles south of the ROW.	May–Jan	**Segment 1 – 2: Low.** Suitable habitat present on the ROW, but no documented occurrences within 5 miles of the ROW (GANDA, 2011), and not observed during botanical surveys in 2012 and 2013 (BRC, 2013). Likely below species' elevation range. **Segment 3: Low.** Suitable habitat present on the ROW, but no documented occurrences within 5 miles of the ROW (GANDA, 2011), and not observed during botanical surveys in 2012 and 2013 (BRC, 2013). **Segment 4 – 5: Low.** Suitable habitat present on the ROW, documented occurrences within 5 miles of the ROW are in foothills of San Jacinto Mts. Not observed during botanical surveys in 2012 and 2013 (BRC, 2013). **Segment 6: Not likely to occur.** Suitable habitat lacking, no documented occurrences within 5 miles of the ROW (CNDDB, 2014), and not observed during botanical surveys in 2012 and 2013 (BRC, 2013).
Juglans californica Southern California black walnut	FED: CA: CRPR: BLM: MSHCP:	None None 4.2 None WRC	Perennial deciduous tree. Found in alluvial soils, in chaparral, cismontane woodland, and coastal scrub from 160 to 3,000 feet elevation. Fragmented distribution in northern and southern California includes western San Bernardino and Riverside Counties.	Mar–Aug	**Segment 1: Low.** Potentially suitable habitat, but not observed during botanical surveys in 2012 and 2013 (BRC, 2013). **Segment 2 – 4: Moderate.** Species is fairly common in project vicinity although no individuals were observed during botanical surveys in 2012 and 2013 (BRC, 2013). **Segment 5: Present.** Observed on west end of Segment near telecom route (Aspen, 2014). **Segment 6: Not likely to occur.** Suitable habitat probably absent. Not observed during botanical surveys in 2012 and 2013 (BRC, 2013).

Table Ap.7-1. Special-Status Plant Species Occurring or Potentially Occurring in the Project Area

Species	Status		Habitat and Distribution	Flowering Period	Occurrence Probability
Lepidium virginicum var. robinsonii Robinson's pepper-grass	FED: CA: CRPR: BLM: MSHCP:	None None 4.3 None None	Annual herb. Found on dry soils in chaparral and coastal scrub below 2,900 feet elevation. Project is near the edge of range of the species. Nearest documented occurrences are in 1952 in Reche Canyon (CNDDB #52), about a mile or more south of the ROW and in 2001 near the landfill southwest of El Casco (CNDDB #168), over a mile south of the ROW.	Jan–Jul	**Segment 1: Low**. Minimal potential suitable habitat present on the proposed ROW, documented occurrences within 5 miles of the ROW (GANDA, 2011). Not observed during botanical surveys in 2012 and 2013 (BRC, 2013). **Segment 2 – 4: Moderate.** Suitable habitat present on the proposed ROW and documented occurrences within about a mile, but not observed during botanical surveys in 2012 and 2013 (BRC, 2013). **Segment 5 – 6: Not likely to occur.** Suitable habitat lacking, outside known range, and not observed during botanical surveys in 2012 and 2013 (BRC, 2013).
Lilium humboldtii ssp. **ocellatum** Ocellated Humboldt lily	FED: CA: CRPR: BLM: MSHCP:	None None 4.2 None WRC	Perennial bulbiferous herb. Found in openings in chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, and riparian woodland at elevations of 100 to 5,900 feet. Nearest documented occurrence was in 1996 in the foothills of the San Bernardino Mountains, about 7 miles north of the ROW (Calflora, 2014).	Mar–Aug	**Segment 1 – 4: Low.** Suitable habitat present on the ROW, but no documented occurrences within 5 miles of the ROW and not observed during botanical surveys in 2012 and 2013 (BRC, 2013). **Segment 5 – 6: Not likely to occur.** Suitable habitat lacking.
Linanthus maculatus (Gilia maculata) Little San Bernardino Mountains linanthus	FED: CA: CRPR: BLM: MSHCP:	None None 1B.2 S CV	Annual herb. Loose, well-aerated sand on wash-margin benches with few or no competing species and void of large shrubs or trees, in areas of desert dune, desert scrub, and Joshua tree woodland at 600 to 6,800 feet elevation. Not found in loose sands away from washes, or in dense stands of weedy annuals. Known only from Riverside and San Bernardino Counties, from edges of washes associated with the San Bernardino Mountains (north and east sides), the Little San Bernardino Mountains, and the northern part of the Coachella Valley.	Mar–May	**Segment 1 – 4: Not likely to occur.** Suitable habitat lacking, no documented occurrences within 5 miles of the ROW (CNDDB, 2014), and not observed during botanical surveys in 2012 and 2013 (BRC, 2013). **Segment 5 – 6: High.** Suitable habitat potentially present, documented occurrences within 5 miles of the ROW (GANDA, 2011). Although not observed during focused surveys, about 200 individuals of this species were observed in 1998 at the east edge of the Whitewater River just north of I-10 (CNDDB #3), which may be in or near the ROW. Even if the species is not present, a seed bank likely persists in or near the ROW.

Table Ap.7-1. Special-Status Plant Species Occurring or Potentially Occurring in the Project Area

Species	Status	Habitat and Distribution	Flowering Period	Occurrence Probability
Mentzelia tricuspis Spiny-hair blazing star	FED: None CA: None CRPR: 2B.1 BLM: None MSHCP: None	Annual herb. Inhabits sandy, gravelly slopes and washes in Mojavean desert scrub, from 500 to 4,200 feet elevation. Known from fewer than twenty extant occurrences.	Mar–May	**Segment 1 – 4: Not likely to occur.** Suitable habitat lacking. With the exception of a collection in 1886 of uncertain location, no documented occurrences within 5 miles of the ROW (CNDDB, 2014). Not observed during botanical surveys in 2012 and 2013 (BRC, 2013). **Segment 5: Moderate.** Suitable habitat potentially present, but no documented occurrences within 5 miles of the ROW (CNDDB, 2014), and not observed during botanical surveys in 2012 and 2013 (BRC, 2013). **Segment 6: Present.** Observed during botanical surveys conducted in 2013 (BRC, 2013).
Nemacaulis denudate var. gracilis Slender woolly-heads	FED: None CA: None CRPR: 2B.2 BLM: None MSHCP: None	Annual herb. Coastal dunes, desert dunes, and Sonoran desert scrub in dunes or sand at 150 to 1,320 feet elevation. Nearest documented occurrence was in 1948 from "east of Whitewater wash" (CNDDB #9).	Mar–May	**Segment 1 – 4: Not likely to occur.** Suitable habitat lacking, no documented occurrences within 5 miles of the ROW (GANDA, 2011), and not observed during botanical surveys in 2012 and 2013 (BRC, 2013). **Segment 5 – 6: Low.** Suitable habitat present on the ROW, but no recent documented occurrences within 5 miles of the ROW and not observed during botanical surveys in 2012 and 2013 (BRC, 2013).
Muhlenbergia californica California muhly	FED: None CA: None CRPR: 4.3 BLM: None MSHCP: WRC	Perennial rhizomatous herb (grass). Found in mesic areas, seeps and stream banks in chaparral, coastal scrub, lower montane coniferous forest, and meadows and seeps at 300 to 6,500 feet elevation. The nearest documented occurrence is from the foothills of the San Jacinto Mountains, nearly 5 miles from the ROW (Calflora, 2014).	Jun-Sep	**Segment 1 – 4: Low.** Suitable habitat potentially present on the ROW, but nearest documented occurrence is from the foothills of the San Jacinto Mountains, nearly 5 miles from the ROW (Calflora, 2014). Not observed during botanical surveys in 2012 and 2013 (BRC, 2013). **Segment 5 – 6: Not likely to occur.** Suitable habitat probably lacking, no recent documented occurrences within 5 miles of the ROW (CNDDB, 2014), and not observed during botanical surveys in 2012 and 2013 (BRC, 2013).

Table Ap.7-1. Special-Status Plant Species Occurring or Potentially Occurring in the Project Area

Species	Status	Habitat and Distribution	Flowering Period	Occurrence Probability
Quercus engelmannii Engelmann oak	FED: None CA: None CRPR: 4.2 BLM: None MSHCP: WRC	Perennial deciduous tree. Chaparral, woodland, and grassland, from 400 to 4,300 feet elevation. Known from Los Angeles, Orange, Riverside, and San Diego Counties and from northern Baja California.	Mar–Jun	**Segment 1 – 3: Moderate.** Suitable habitat potentially present, but not observed during botanical surveys in 2012 and 2013 (BRC, 2013). **Segment 4: Present.** Observed during botanical survey in 2012 (BRC, 2013). **Segment 5 – 6: Not likely to occur.** Suitable habitat probably lacking and not observed during botanical surveys in 2012 and 2013 (BRC, 2013).
Romneya coulteri Coulter's matilija poppy	FED: None CA: None CRPR: 4.2 BLM: None MSHCP: WRC	Perennial rhizomatous herb. Found in chaparral and coastal scrub, often in burn areas, at elevations from 50 to 3,950 feet. In the project vicinity, this species has been documented from the foothills of the San Bernardino, San Gabriel, and Santa Ana Mountains. However, because it is generally a fire follower, existing records are not believed to be indicative of the full distribution of this species.	Mar–Jul	**Segment 1 – 4: Moderate.** Suitable habitat present on the ROW, particularly burned areas. Not observed during botanical surveys in 2012 and 2013 (BRC, 2013). **Segment 5 – 6: Not likely to occur.** Suitable habitat probably lacking and not observed during botanical surveys in 2012 and 2013 (BRC, 2013).
Selaginella eremophila Desert spike-moss	FED: None CA: None CRPR: 2B.2 BLM: None MSHCP: None	Perennial rhizomatous herb. Shaded sites in gravelly soils and among rocks or in crevices from 700 to 3,000 (8,000?) feet elevation in Sonoran desert scrub.	May–Jul, mainly Jun	**Segment 1 – 4: Not likely to occur.** Suitable habitat lacking and not observed during botanical surveys in 2012 and 2013 (BRC, 2013). **Segment 5: Moderate.** Suitable habitat potentially present, but not observed during botanical surveys in 2012 and 2013 (BRC, 2013). **Segment 6: Present.** Observed during botanical survey in 2012 (BRC, 2013)
Symphyotrichum defoliatum (Aster defoliatus) San Bernardino aster	FED: None CA: None CRPR: 1B.2 BLM: S MSHCP: None	Perennial rhizomatous herb. Vernally wet sites (such as ditches, streams, and springs) in many plant communities below 6,700 feet elevation. In California, known from Ventura, Kern, San Bernardino, Los Angeles, Orange, Riverside, and San Diego Counties. May also occur in San Luis Obispo County. In the western Riverside County area, this species is scarce, and documented only from Temescal and San Timoteo Canyons (Roberts et al., 2004).	Jul–Nov	**Segment 1 – 2: Low.** Suitable habitat potentially present but limited. Documented occurrences within 5 miles of the ROW (GANDA, 2011). Not observed during botanical surveys in 2012 and 2013 (BRC, 2013). **Segment 3 – 4: Moderate.** Not observed during focused surveys, but documented from "El Casco, San Timoteo Canyon" in 1951 (CNDDB #24). **Segment 5 – 6: Low.** Suitable habitat potentially present. One documented occurrence from the foothills of the San Jacinto Mts (GANDA, 2011). Not observed during botanical surveys in 2012 and 2013 (BRC, 2013).

Table Ap.7-1. Special-Status Plant Species Occurring or Potentially Occurring in the Project Area

Species	Status	Habitat and Distribution	Flowering Period	Occurrence Probability
Thelypteris puberula var. sonorensis Sonoran maiden fern	FED: None CA: None CRPR: 2B.2 BLM: None MSHCP: None	Perennial rhizomatous herb. Found in meadows and seeps along streams and seepage areas, at elevations between 150 and 2,000 feet. The nearest documented occurrence was in 2009 in Little Sand Canyon in the San Bernardino Mountains (CNDDB #13), about 6 miles north of the ROW.	Jan–Sep	**Segment 1: Not likely to occur.** Suitable habitat probably lacking, no recent documented occurrences within 5 miles of the ROW and not observed during botanical surveys in 2012 and 2013 (BRC, 2013). **Segment 2 – 4: Low.** Suitable habitat present on the ROW, but no recent documented occurrences within 5 miles of the ROW and not observed during botanical surveys in 2012 and 2013 (BRC, 2013). **Segment 5 – 6: Not likely to occur.** Suitable habitat probably lacking, no recent documented occurrences within 5 miles of the ROW and not observed during botanical surveys in 2012 and 2013 (BRC, 2013).

Sources: Baldwin et al, 2012; Calflora, 2014; CCH, 2014; CNPS, 2014; CNDDB, 2014; Roberts et al., 2004; USFWS, 2009a; Aspen, 2014; BRC, 2003; BRC, 2013; SCE, 2007; SCE, 2013.

Status Codes

US Fish and Wildlife Service (FED) Designations:

END: Federally listed, endangered.
THR: Federally listed, threatened.
Delisted: Removed from federal listing
BGEPA: Bald and Golden Eagle Protection Act.

California Department of Fish and Wildlife (CA) Designations:

END: State listed, endangered.
THR: State listed, threatened.
CSC: Species of Special Concern: Considered vulnerable to extinction due to declining numbers, limited geographic ranges, or ongoing threats.
FP: Fully protected. May not be taken or possessed without permit from CDFW.
SA: Special Animal: An animal species that is tracked in the CNDDB, but has no other status at the state or federal level.
WL: Watch list.
PFM: Protected fur-bearing mammal.

Other Designations

S: Bureau of Land Management Sensitive species.
WRC: Western Riverside County MSHCP Species: covered under the MSHCP.
WRS: Western Riverside County MSHCP Species: surveys are required within indicated habitats and/or survey areas; covered under the MSHCP.
WRP: Western Riverside County MSHCP Species: will be adequately conserved when specified requirements are met; covered under the MSHCP.
CV: Coachella Valley MSHCP Species: covered under the MSHCP.

California Rare Plant Rank (CRPR) designation

1A	Plants presumed extinct in California.
1B	Plants rare, threatened, or endangered in California and elsewhere.
2B	Plants rare, threatened, or endangered in California, but more common elsewhere.
3	Plants about which we need more information – a review list.
4	Plants of limited distribution – a watch list.
.1	Seriously threatened in California (high degree/immediacy of threat).
.2	Fairly threatened in California (moderate degree/immediacy of threat).
.3	Not very threatened in California (low degree/immediacy of threats or no current threats known).

CNDDB California State (S) Ranks

S1	Extremely endangered: <6 viable occurrences (EOs) or < 1,000 individuals, or 2,000 acres of occupied habitat.
S2	Endangered: about 6-20 EOs or 1-3,000 individuals, or 2,000-10,000 acres of occupied habitat.
S3	Restricted Range, rare: about 21-100 EOs or 3,000-10,000 individuals, or 10,000-50,000 acres of occupied habitat.
S4	Apparently Secure: some factors exist to cause some concern such as narrow habitat or continuing threats.
S5	Demonstrably Secure: commonly found throughout its historic range.

A question mark may be added to S ranks to indicate there is some uncertainty as to status.

Table Ap.7-2. Special-Status Wildlife Species Potentially Occurring Or Known to Occur

Species	Status	Habitat and Distribution	Activity Period[1]	Occurrence Probability
INVERTEBRATES				
INSECTA, Order Orthoptera (grasshoppers, katydids, and crickets)				
Macrobaenetes valgum Coachella giant sand treader cricket	FED: None CA: SA BLM: None MSHCP: CVC	Aeolian habitat (wind-swept sand dune ridges), spring-dampened sandy areas. Restricted to Coachella Valley. Populations fluctuate in response to rainfall levels and may be very low during drought years.	Nocturnal. Juveniles active late fall through early winter. Adults active early to mid-spring.	**Segment 1 – 4: Not likely to occur.** Outside of known range and no suitable habitat. **Segment 5: Not likely to occur.** No suitable habitat. **Segment 6: Low.** Habitat poor. Documented occurrence within 5 miles of the ROW (GANDA, 2011), but outside known current range. Focused searches for the species' distinctive delta-shaped burrow tailings failed to detect the species within the floodplain on the east side of the Whitewater River (AMEC, 2012c).
Stenopelmatus cahuilaensis Coachella Valley Jerusalem cricket	FED: None CA: SA BLM: None MSHCP: CVC	Aeolian habitat (wind-deposited sand dunes, drift sands), and water-deposited gravelly/sandy soils in the western Coachella Valley and eastern San Gorgonio Pass area. Vulnerable to desiccation; migrates up and down within the soil to maintain moisture levels. Can be found foraging, courting, and sheltering beneath surface objects such as decomposing wood, rocks, duff, and other debris.	Nocturnal. Winter and early spring.	**Segment 1 – 4: Not likely to occur.** Outside of known range and no suitable habitat. **Segment 5: Low.** Potentially suitable habitat may occur in the San Gorgonio River Wash, but not found in the Project Study Area during focused surveys (AMEC, 2012c). **Segment 6: Moderate.** Documented occurrence within 5 miles of the ROW (GANDA, 2011). Not detected during focused surveys, but potentially suitable habitat occurs at two primary locations: (1) within the floodplain on the east side of the Whitewater River, and (2) within the Whitewater Hills between Whitewater Canyon and State Route 62 (AMEC, 2012c).
INSECTA, Order Coleoptera (beetles)				
Dinacoma caseyi Casey's June beetle	FED: **END** CA: SA BLM: None MSHCP: None	Larvae develop underground in fine alluvial sands and feed on plant roots and underground decomposing material. Associated with the perennial shrub cheesebush. Adult beetles emerge in the spring and are active for two to four weeks, when courtship and mating takes place. Current distribution appears to be restricted to the mouth and alluvial floodplain of Palm Canyon within and just south of Palm Springs, in association with deposits of fine silts, sands, and gravels.	Nocturnal and crepuscular. Spring.	**Segment 1 – 3: Not likely to occur.** Outside of known range and no suitable habitat. **Segment 4 – 5: Not likely to occur.** Potentially suitable habitat present, but outside of known range. The proposed ROW is approximately 10 miles northwest of the Draft Recommended Survey Area for Casey's June beetle (AMEC, 2012c). **Segment 6: Low.** Potentially suitable habitat present. Outside of known current range (AMEC, 2012c). Documented occurrence within 5 miles of the ROW (GANDA, 2011).

Table Ap.7-2. Special-Status Wildlife Species Potentially Occurring Or Known to Occur

Species	Status	Habitat and Distribution	Activity Period[1]	Occurrence Probability
INSECTA, Order Hymenoptera (ants, bees, & wasps)				
Halictus harmonius Harmonius halictid bee	FED: None CA: SA BLM: None MSHCP: None	Habitat is not well understood. Known only from the foothills of the San Bernardino and (with less certainty) the San Jacinto Mountains in Southern California. Species not recorded in Riverside and San Bernardino Counties since the 1930s (CNDDB, 2014)	Diurnal. Spring and summer.	**Segment 1 – 6: Low.** Species is little known and sparsely distributed (LSA, 2013b).
AMPHIBIANS				
SALAMANDRIDAE (newts)				
Taricha torosa torosa Coast range newt	FED: None CA: CSC BLM: None MSHCP: WRC	Coast Ranges, Mendocino County to San Diego County. In Riverside County, this species is mainly found in the Santa Ana Mountains. Inhabits drier climates in southern California at elevations ranging from sea level to 6,000 feet elevation in riparian and oak woodlands, coastal scrub, mixed chaparral, and annual grassland. Breeds in ponds and quiet streams, sometimes larger streams.	Generally nocturnal, may be active during the day. Winter to early spring.	**Segment 1 – 2: Not likely to occur.** Limited or no suitable breeding habitat and no documented occurrences (CNDDB, 2014). **Segment 3 – 5: Low.** Potentially suitable habitat present, but no documented occurrences (CNDDB, 2014). Not found during surveys conducted east of the I-10 crossing in Beaumont (AMEC, 2012a). **Segment 6: Low.** Moderate potential to occur north of the proposed ROW in Whitewater Canyon, but the habitat where the proposed ROW would cross Whitewater Canyon may not be suitable (Aspen, 2006). Not found during surveys (AMEC, 2012a).
SCAPHIOPODIDAE (spadefoot toads)				
Spea hammondii Western spadefoot toad	FED: None CA: CSC BLM: S MSHCP: WRC	Grasslands and occasionally hardwood woodlands; largely terrestrial but requires rain pools or other ponded water (including cow ponds and road ruts) persisting at least three weeks for breeding; burrows in loose soils during dry season. Occurs in the Central Valley and adjacent foothills, the non-desert areas of southern California, and Baja California.	Primarily nocturnal. Oct–Apr, following onset of winter rains.	**Segment 1: Low.** Suitable breeding habitat probably absent or limited. No documented occurrences within 5 miles of the ROW (GANDA, 2011). **Segment 2: Low.** Suitable breeding habitat limited. No documented occurrences within 5 miles of the ROW (GANDA, 2011). **Segment 3: Present.** Tadpoles found within the vernal pool in the spillway near Palomares Road in the City of Redlands (LSA, 2012). **Segment 4 – 5: High.** Suitable breeding habitat potentially present. Documented occurrences near Beaumont (CNDDB, 2014). Not found during surveys (AMEC, 2012a). **Segment 6: Not likely to occur.** No suitable habitat and outside known range. Not found during surveys (AMEC, 2012a).

Table Ap.7-2. Special-Status Wildlife Species Potentially Occurring Or Known to Occur

Species	Status		Habitat and Distribution	Activity Period[1]	Occurrence Probability
RANIDAE (frogs)					
Rana muscosa Sierra Madre (mountain) yellow-legged frog	FED: CA: BLM: MSHCP:	**END** **END** None WRC	This species is highly aquatic and inhabits ponds, dams, lakes, and streams at moderate to high elevations. Found near permanent sources of water in the San Gabriel, San Jacinto, and San Bernardino Mountains. Exhaustive surveys have been done by the US Geological Survey to locate any remaining populations.	Primarily diurnal. Hibernates in winter, may aestivate during dry periods in summer.	**Segment 1 – 2: Not likely to occur.** No suitable habitat. **Segment 3 – 4: Not likely to occur.** Suitable aquatic habitat potentially present in San Timoteo Creek. No documented occurrences (GANDA, 2011) and outside species' current known range. **Segment 5: Low.** Reported in the San Gorgonio River near Banning Peak approximately 2.5 miles south of the proposed ROW, but habitat where the transmission line would span the San Gorgonio River is not suitable (Aspen, 2006). Also reported on or near the proposed ROW in the gravel quarry pond(s) northeast of the City of Banning (Aspen, 2006). However, there are no known populations in this location (USFWS, 2012) and Aspen biologists have been unable to confirm this report. It's likely that this report is in error. **Segment 6: Low.** Documented occurrence in Whitewater River, approximately three miles north of Interstate 10. However, the habitat where the proposed ROW crosses Whitewater Canyon is probably not suitable (Aspen, 2006). Not found during surveys (AMEC, 2012a).
REPTILES					
TESTUDINIDAE (land tortoises)					
Gopherus agassizii Desert tortoise	FED: CA: BLM: MSHCP:	**THR** **THR** None CV	Historically found throughout most of the Mojave and Sonoran Deserts into Arizona, Nevada, and Utah. Believed to have been extirpated from the western and southern portions of the Antelope Valley. Found in creosote bush scrub, saltbush scrub, thorn scrub (in Mexico), and Joshua tree woodland. Found in the open desert as well as in oases, riverbanks, washes, dunes, and occasionally rocky slopes.	Diurnal. Spring, early fall in areas with summer rains, brief periods of activity at other times.	**Segment 1 – 4: Not likely to occur.** Outside of known range and no suitable habitat. **Segment 5: Present.** Near Lion Canyon, east of Cabazon (LSA, 2010) and near Deep Creek Road on the Morongo Reservation (GANDA, 2010). Two live individuals incidentally found within the eastern edge of the Morongo Reservation (LSA, 2012). **Segment 6: Present.** Scat and burrows detected between Devers Substation and the Morongo Reservation (AMEC, 2012b).
IGUANIDAE (iguanas)					
Sauromalus ater Chuckwalla	FED: CA: BLM: MSHCP:	None SA None None	Sandy areas with rock outcrops or boulders in a variety of desert plant communities. Occurs in the Mojave and Sonoran Deserts of the southwestern United States and northwestern Mexico. Sea level to around 6,000 feet elevation.	Diurnal. May–Sep.	**Segment 1 – 4: Not likely to occur.** Outside known range and no suitable habitat. **Segment 5 – 6: Low.** Habitat may not be suitable (LSA, 2013b). Not found during 2012 surveys (LSA, 2012).

Table Ap.7-2. Special-Status Wildlife Species Potentially Occurring Or Known to Occur

Species	Status	Habitat and Distribution	Activity Period[1]	Occurrence Probability
GEKKONIDAE (geckos)				
Coleonyx variegatus abbotti San Diego banded gecko	FED: None CA: SA BLM: None MSHCP: WRC	Coastal sage scrub and chaparral, often on granite or rocky outcrops, in coastal and cismontane southern California. Interior Ventura County south to northern Baja California Sur. A different subspecies, the desert banded gecko, *C.v. variegatus*, is found in desert habitats.	Nocturnal. Apr–Oct.	**Segment 1 – 3: Moderate.** Suitable habitat present. No documented occurrences within 5 miles of the ROW (CNDDB 2014). **Segment 4 – 6: Not likely to occur.** Outside species' current known range (LSA, 2013b).
PHRYNOSOMATIDAE (fringe-toed lizards, horned lizards and relatives)				
Phrynosoma blainvillii Coast (San Diego) horned lizard	FED: None CA: CSC BLM: S MSHCP: WRC	Primarily in sandy soil in open areas, especially washes and floodplains, in many plant communities. Requires open areas for sunning, bushes for cover, patches of loose soil for burial, and an abundant supply of ants or other insects. Occurs from Baja California west of the deserts north to Shasta County below 8,000 feet elevation.	Diurnal. Apr–Jul with reduced activity Aug–Oct.	**Segment 1 – 2: Moderate.** Suitable habitat potentially present. Documented occurrences within 5 miles of the ROW (GANDA, 2011). **Segment 3 – 4: Present.** Suitable habitat present. Observed near El Casco Substation (Aspen, 2007). **Segment 5 – 6: High**. Suitable habitat present and documented occurrences (GANDA, 2011). Not detected during surveys, but expected to occur (AMEC, 2012a).
Phrynosoma mcallii Flat-tailed horned lizard	FED: None CA: CSC BLM: S MSHCP: CV	Found in the Colorado Desert in California, Arizona, and Mexico. Occurs in areas of fine sand and sparse vegetation in desert washes and desert flats in Riverside, San Diego, and Imperial Counties; mainly in the Imperial and Coachella Valleys and eastern San Diego County, below sea level to 600 feet elevation. Feeds primarily on ants.	Diurnal. Year-round, peaks of activity in spring, early summer, and fall.	**Segment 1 – 4: Not likely to occur.** Outside of known range and no suitable habitat. **Segment 5 – 6: Low.** Potentially suitable habitat present. Documented occurrences within 5 miles of the ROW (GANDA, 2011), but may be outside the species' current range. Not found during focused surveys (AMEC, 2012a).
Uma inornata Coachella Valley fringe-toed lizard	FED: **THR** CA: **END** BLM: None MSHCP: CV	Limited to sand dune habitat in the Coachella Valley of eastern Riverside County, associated with sparse desert scrub, alkali scrub, and desert wash habitats from sea level to 1,600 feet elevation. Requires fine, loose, windblown (aeolian) sand habitat interspersed with hardpan and sparse shrubs. Population levels can fluctuate dramatically in response to rainfall levels.	Diurnal. Mid-spring to mid-fall.	**Segment 1 – 4: Not likely to occur.** Outside of known range and no suitable habitat. **Segment 5: Not likely to occur.** No suitable habitat. Documented occurrences (GANDA, 2011), but may be outside species' current range. **Segment 6: Low.** Potentially suitable habitat along the proposed ROW east of the Whitewater River. Documented occurrences within 5 miles of the ROW (GANDA, 2011), but may be outside the species' current range. Not found during surveys (AMEC, 2012a).

Table Ap.7-2. Special-Status Wildlife Species Potentially Occurring Or Known to Occur

Species	Status		Habitat and Distribution	Activity Period[1]	Occurrence Probability
TEIIDAE (whiptails & relatives)					
Aspidoscelis hyperythra Orange-throated whiptail	FED: CA: BLM: MSHCP:	None CSC None WRC	Prefers washes and other sandy areas with patches of brush and rocks, in chaparral, coastal sage scrub, juniper woodland, and oak woodland from sea level to 3,000 feet elevation. Perennial plants required. Occurs in Riverside, Orange, San Diego Counties west of the crest of the Peninsular Ranges, in extreme southern San Bernardino County near Colton, and in Baja California.	Diurnal. Mar–Jul with reduced activity Aug–Oct.	**Segment 1 – 4: High.** Potentially suitable habitat present. Documented occurrences within 5 miles of the ROW (GANDA, 2011). **Segment 5 – 6: Low.** Outside of known range (a historic CNDDB record from the vicinity of White Water Canyon is widely held to be erroneous). Not found during focused surveys (AMEC, 2012a).
Aspidoscelis tigris stejnegeri *(Cnemidophorus tigris multiscutatus)* Coastal western whiptail	FED: CA: BLM: MSHCP:	None SA None WRC	Wide variety of habitats including coastal sage scrub, sparse grassland, and riparian woodland; coastal and inland valleys and foothills; Ventura County to Baja California.	Diurnal. Apr–Aug.	**Segment 1 – 6: Present.** Throughout the Project Study Area, especially along Cottonwood Canyon near the City of Whitewater (LSA, 2012; LSA, 2013a).
ANNIELLIDAE (legless lizards)					
Anniella pulchra pulchra Silvery legless lizard	FED: CA: BLM: MSHCP:	None CSC None None	Inhabits sandy or loose loamy soils with high moisture content under sparse vegetation from central California to northern Baja California.	Diurnal and nocturnal. Nearly year-round in southern areas.	**Segment 1 – 5: High.** Suitable habitat present, but the species is not easily detected. Documented occurrences within 5 miles of the ROW on Segments 1 – 4 (GANDA, 2011). **Segment 6: Low.** Suitable habitat probably lacking.
BOIDAE (boas)					
Charina (Lichanura) trivirgata Rosy boa ***Lichanura orcutti*** Desert rosy boa	FED: CA: BLM: MSHCP:	None SA None None	In rocky areas in chaparral or scrub habitats or adjacent oak woodland; also in rocky riparian areas. Found in Los Angeles County, southwestern San Bernardino County, south through western Riverside County, and San Diego County into Baja California. Rosy boa taxonomy has been recently revised, but the changes are not universally accepted. All rosy boa subspecies or former subspecies potentially found on the proposed ROW are included here.	Nocturnal, rarely crepuscular or diurnal. Apr–Sep.	**Segment 1 – 4: Moderate.** Suitable habitat potentially present and within known range, but no documented occurrences within 5 miles of the ROW (GANDA, 2011). **Segment 5 – 6: Present.** Two individuals found along Stubbe Canyon near the City of Whitewater (LSA, 2012). Eight desert rosy boas observed on the east end of Segment 5 and west end of Segment 6 (AMEC, 2012a).

Table Ap.7-2. Special-Status Wildlife Species Potentially Occurring Or Known to Occur

Species	Status	Habitat and Distribution	Activity Period[1]	Occurrence Probability
COLUBRIDAE (egg-laying snakes)				
Diadophis punctatus modestus San Bernardino ringneck snake	FED: None CA: SA BLM: None MSHCP: None	Under surface objects along drainage courses, preferring mesic chaparral and oak and walnut woodland communities. Moist habitats of southwestern California from about Ventura to Orange Counties. Not found in high mountains or desert (except Providence Mountains).	Diurnal. Crepuscular and nocturnal during warmer periods.	**Segment 1 – 4: High.** Species not detected during surveys, but conditions appear to be suitable. **Segment 5 – 6: Low.** Suitable habitat probably lacking. Not found during surveys (AMEC, 2012a).
Salvadora hexalepis virgultea Coast patch-nosed snake	FED: None CA: CSC BLM: None MSHCP: None	Coastal chaparral, washes, sandy flats, and rocky areas from San Luis Obispo County to northwestern Baja California.	Diurnal. Mostly year-round.	**Segment 1 – 3: Moderate.** Species not detected during surveys, but suitable habitat occurs on site. No documented occurrences within 5 miles of the ROW (CNDDB, 2014). **Segment 4 – 6: Moderate.** Not detected during surveys, but suitable habitat present. Low to moderate potential for this species to occur on the western half of the project (AMEC, 2012a).
NATRICIDAE (live-bearing snakes)				
Thamnophis hammondii Two-striped garter snake	FED: None CA: CSC BLM: S MSHCP: None	Highly aquatic. Only in or near permanent sources of water. Streams with rocky beds supporting willows or other riparian vegetation. From Monterey County to northwest Baja California.	Diurnal. Year-round.	**Segment 1 – 2: Not likely to occur.** Suitable habitat lacking. **Segment 3 – 6: High.** Suitable habitat potentially present. Not observed during surveys. No documented occurrences in the San Timoteo Canyon area (CNDDB, 2014). Observed in well-developed riparian woodland along Whitewater River four miles north of the Project Study Area (AMEC, 2012a). Documented occurrence in scrub habitat along the Whitewater River, just south of the proposed ROW (CNDDB, 2014).
VIPERIIDAE(vipers)				
Crotalus ruber Red-diamond rattlesnake	FED: None CA: CSC BLM: None MSHCP: WRC	Desert scrub, thorn scrub, open chaparral and woodland; occasional in grassland and cultivated areas. Prefers rocky areas and dense vegetation. Morongo Valley in San Bernardino and Riverside Counties to the west and south into Mexico.	Primarily nocturnal. Mid-spring through mid-fall.	**Segment 1 – 2: Moderate.** Suitable habitat potentially present. Documented occurrences within 5 miles of the ROW (GANDA, 2011). **Segment 3 – 6: Present.** Several individuals observed between Devers Substation and Beaumont (AMEC, 2012a) and in the San Timoteo Badlands just south of the City of Loma Linda (LSA, 2012).
BIRDS				
PELECANIDAE (pelicans)				
Pelecanus erythrorhynchos American white pelican	FED: None CA: CSC BLM: None MSHCP: None	Nests and forages at large lakes and coastal estuaries. Preys mainly on fish. Seen in inland southern California during migration.	Diurnal. Spring and fall migration.	**Segment 1 – 6: Present (migration). Not likely to occur (nesting colony).** Species was observed on or near the proposed ROW, but no suitable nesting habitat in the Project Study Area (SCE, 2013).

Table Ap.7-2. Special-Status Wildlife Species Potentially Occurring Or Known to Occur

Species	Status	Habitat and Distribution	Activity Period[1]	Occurrence Probability
ARDEIDAE (bitterns, herons, and relatives)				
Ardea herodias Great blue heron	FED: None CA: SA BLM: None MSHCP: WRC	Wading species; forages in shallow water in aquatic and wetland habitats or, less commonly, in open fields. Nests in communal rookeries in large secluded trees. Found throughout most of California.	Diurnal. Year-round.	**Segment 1 – 6: Present (foraging). Not likely to occur (nesting colony).** Species was observed on or near the proposed ROW, but no suitable nesting habitat in the Project Study Area (SCE, 2013).
Ardea alba Great egret	FED: None CA: SA BLM: None MSHCP: None	Wading species; forages in shallow water in aquatic and wetland habitats or, less commonly, in open fields. Nests in communal rookeries in large secluded trees. Found throughout most of California.	Diurnal. Year-round.	**Segment 1 – 6: Present (foraging). Not likely to occur (nesting colony).** Species was observed on or near the proposed ROW, but no nesting colonies found in the Project Study Area (SCE, 2013).
Egretta thula Snowy egret	FED: None CA: SA BLM: None MSHCP: None	Wading species; forages in shallow water and along shores in aquatic and wetland habitats or, less commonly, in open fields. Nests in communal rookeries in dense marshes in wetland vegetation or low trees. Found throughout most of California.	Diurnal. Mainly Sep–Apr.	**Segment 1 – 6: Present (foraging). Not likely to occur (nesting colony).** Species was observed on or near the proposed ROW, but no suitable nesting habitat in the Project Study Area (SCE, 2013).
Nycticorax nycticorax Black-crowned night heron	FED: None CA: SA BLM: None MSHCP: WRC	Feeds in shallow water along the margins of lakes, rivers, and freshwater and saline wetland habitats. Nests in communal rookeries in dense trees, shrubs, or wetland vegetation near aquatic or wetland feeding areas.	Nocturnal and crepuscular. Year-round.	**Segment 1 – 6: Present (foraging). Not likely to occur (nesting colony).** Species was observed on or near the proposed ROW, but no nesting colonies found in the Project Study Area (SCE, 2013).
PANDIONIDAE (ospreys)				
Pandion haliaetus Osprey	FED: None CA: SA/WL BLM: None MSHCP: WRC	Nests in northern North America and Mexican coastlines near large water bodies, mainly in conifer woodlands; preys primarily on fish. Winters in Central and South America. Seen in southern California during migration.	Diurnal. Spring and fall migration.	**Segment 1 – 6: Present (migration). Not likely to occur (nesting).** Species was observed on or near the proposed ROW, but no suitable nesting habitat present and does not nest in the Project Study Area (SCE, 2013).
ACCIPITRIDAE (hawks, kites, harriers and eagles)				
Accipiter cooperii Cooper's hawk	FED: None CA: SA BLM: None MSHCP: WRC	Forages in a wide range of habitats, but primarily in forests and woodlands. Usually nests in tall trees (20 to 60 feet). Found throughout North America.	Diurnal. Year-round.	**Segment 1 – 6: Present (foraging); High (nesting).** Observed foraging over El Casco Substation (Aspen, 2007) and throughout the Project Study Area (LSA, 2012; LSA, 2013a). Nesting habitat present in the Project Study Area. Cooper's hawk may use the hollow arms of monopole transmission structures as nest sites.

Table Ap.7-2. Special-Status Wildlife Species Potentially Occurring Or Known to Occur

Species	Status		Habitat and Distribution	Activity Period[1]	Occurrence Probability
Aquila chrysaetos Golden eagle	FED: CA: BLM: MSHCP:	BGEPA FP/WL S WRC	Generally open country of the Temperate Zone worldwide. Nesting primarily in rugged mountainous country. Golden eagles that breed in Alaska and northern Canada winter in the northeast and north central U.S. Golden eagles in southwestern Canada and the western U.S. are year-round residents.	Diurnal. Year-round.	**Segment 1: Unlikely to occur (foraging & nesting).** No natural nesting habitat present. Could potentially nest on large transmission towers, but unlikely in developed areas. Minimal potential foraging habitat present. **Segment 2: Low (foraging & nesting).** Natural nesting habitat potentially present within 4 miles of the ROW. Could potentially nest on large transmission towers, but unlikely in developed areas. Foraging habitat potentially present. **Segment 3: Present (foraging). Low (nesting).** Natural nesting habitat potentially present within 4 miles of the ROW. Could potentially nest on transmission towers. Foraging habitat present and species observed foraging near El Casco Substation (Aspen, 2007). **Segment 4: Present (foraging & nesting).** Nest detected 1.5 miles from the Project Study Area during 2013 focused surveys (WRI, 2013). Species known to forage in the area near the nest. Foraging habitat present and species observed foraging near El Casco Substation (Aspen, 2007). **Segment 5: Present (foraging & nesting).** Active nest south of Segment 4 is within 5 miles of the Segment 5 ROW. Foraging observed within the Morongo Reservation (LSA, 2010). **Segment 6: High (foraging & nesting).** Natural nesting habitat potentially present within 4 miles of the ROW. Active and potentially active nests within 10 miles of the ROW (WRI, 2013). Could potentially nest on large transmission towers. Foraging habitat present. Two individuals observed flying over transmission towers located in the Whitewater River area (LSA, 2012).
Buteo regalis Ferruginous hawk	FED: CA: BLM: MSHCP:	None SA/WL None WRC	Open country in western North America; north to Canada in summer and south to Mexico in winter.	Diurnal. Mid-Sep–mid-Apr.	**Segment 1 – 3: Moderate (wintering).** Suitable habitat potentially present. Documented occurrence within 5 miles of the ROW on Segment 3 (GANDA, 2011). **Segment 4: Present (wintering).** Within Project Study Area in northeast corner of the City of Beaumont (LSA, 2012). **Segment 5 – 6: Moderate (wintering).** Suitable habitat potentially present. No documented occurrences within 5 miles of the ROW (GANDA, 2011).

Table Ap.7-2. Special-Status Wildlife Species Potentially Occurring Or Known to Occur

Species	Status	Habitat and Distribution	Activity Period[1]	Occurrence Probability
Buteo swainsoni Swainson's hawk	FED: None CA: **THR** BLM: S MSHCP: WRC	Open desert, grassland, or cropland containing scattered, large trees or small groves. Breeds in stands with few trees in juniper-sage flats, riparian areas, and in oak savannah in the Central Valley. Forages in adjacent grasslands or suitable grain or alfalfa fields, or livestock pastures. Breeds and nests in western North America; winters in South America. In southern California, now mainly a spring and fall transient.	Diurnal. Spring and fall (in migration).	**Segment 1 – 2: Moderate (migration). Not likely to occur (nesting).** **Segment 3 – 4: Present (migration). Not likely to occur (nesting).** Some suitable nesting habitat is present in the Project Study Area, but nesting individuals not observed and Project Study Area is outside the species known breeding range. Migrants observed; over 200 migrants observed on hills just east of the San Timoteo Landfill near Palomares Road and San Timoteo Creek Road in 2013 (LSA, 2012; LSA, 2013a). **Segment 5 – 6: Moderate (migration). Not likely to occur (nesting).**
Circus cyaneus Northern harrier	FED: None CA: CSC BLM: None MSHCP: WRC	Marshy habitats, grassland, and other open country; uncommon in open desert and brushlands. Found in the temperate zone worldwide. Nests on the ground in in tall, dense clumps of vegetation. Usually nests in marshes or along rivers or lakes, but may nest in grasslands, grain fields, or sagebrush flats several miles from water.	Diurnal. Year-round, but more widespread in winter.	**Segment 1 – 6: Present (foraging). Low (nesting).** Suitable nesting habitat limited. Foraging birds observed in open grassland near El Casco (Aspen, 2007), within the Morongo Reservation (LSA, 2010), and in various locations in the Project Study Area (LSA, 2012; LSA, 2013a).
Elanus leucurus White-tailed kite	FED: None CA: FP BLM: S MSHCP: WRC	Typically nests in riparian trees such as oaks, willows, and cottonwoods at low elevations. Forages in open country. Found in South America and in southern areas and along the western coast of North America.	Diurnal. Year-round.	**Segment 1 – 2: Low.** Suitable habitat lacking. No documented occurrences within 5 miles of the ROW (GANDA, 2011). **Segment 3 – 4: Present (foraging). High (nesting).** Species observed foraging near El Casco (Aspen, 2007) and in riparian habitat within the Project Study Area (LSA, 2012). Suitable nesting habitat is present within the Project Study Area. Documented occurrences within 5 miles of the ROW (GANDA, 2011). **Segment 5 – 6: Low.** Suitable habitat lacking.
Haliaeetus leucocephalus Bald eagle	FED: BGEPA CA: **END**/FP BLM: S MSHCP: WRC	Winters locally at deep lakes and reservoirs feeding on fish and waterfowl. Nests in large trees with open branches, particularly ponderosa pine, near a permanent water source. Locally rare throughout North America.	Diurnal. Primarily Nov–Feb, but nests locally.	**Segment 1 – 2: Not likely to occur (foraging & nesting).** Suitable habitat lacking. **Segment 3: Low (foraging). Not likely to occur (nesting).** Occasional winter visitors have been observed in the area, and potentially suitable wintering habitat present (LSA, 2013b). No suitable nesting habitat. **Segment 4 – 6: Not likely to occur (foraging & nesting).** Suitable habitat lacking.

Table Ap.7-2. Special-Status Wildlife Species Potentially Occurring Or Known to Occur

Species	Status	Habitat and Distribution	Activity Period[1]	Occurrence Probability
CHARADRIIDAE (plovers and relatives)				
Charadrius montanus Mountain plover	FED: None CA: CSC BLM: S MSHCP: WRC	Winters in open grasslands and agricultural fields below 3,200 feet in California and Mexico. Breeds in the plains states.	Diurnal. Winter.	**Segment 1 – 4: Low.** Marginally suitable habitat in the Project Study Area, but not observed during surveys (LSA, 2013b). Species observed in agricultural fields south of Beaumont near Gilman Springs Road, approximately seven miles from the proposed ROW (eBird, 2014). **Segment 5 – 6: Not likely to occur.** Suitable habitat lacking. Not observed during surveys (LSA, 2013b).
CUCULIDAE (cuckoos and relatives)				
Coccyzus americanus occidentalis Western yellow-billed cuckoo	FED: **THR** CA: **END** BLM: S MSHCP: WRS	Breeds and nests in extensive stands of dense cottonwood/willow riparian forest along broad, lower flood bottoms of larger river systems at scattered locales in western North America; winters in South America. In California, this species requires dense, wide riparian woodlands with well-developed understories for breeding (Garrett and Dunn, 1981). Nesting is restricted to riparian habitats where humidity is high and the dense understory abuts slow-moving streams, backwaters, or seeps (Zeiner et al., 1990). Nesting birds have become extremely rare in southern California. They no longer nest in their last local stronghold in the riparian forests of the Prado Basin (LSA, 2013b).	Diurnal. May–Sep.	**Segment 1 – 2: Low (foraging). Not likely to occur (nesting).** No suitable nesting habitat present. Species observed within 5 miles of the ROW (GANDA, 2011), but no nesting habitat within Project Study Area. **Segment 3 – 4: High (foraging). Low (nesting).** Observed in riparian habitat associated with San Timoteo Creek south of El Casco Substation (outside of the Project Study Area) (Aspen, 2007). Nesting has not been documented at San Timoteo Creek (County of Riverside, 2003). **Segment 5 – 6: Low (foraging). Not likely to occur (nesting).** No suitable nesting habitat present. No documented occurrences within 5 miles of the ROW (GANDA, 2011).
STRIGIDAE (typical owls)				
Asio otus Long-eared owl	FED: None CA: CSC BLM: None MSHCP: None	Scarce and local in forests and woodlands throughout much of the Northern Hemisphere. Rare resident in coastal southern California. Nests and roosts in dense riparian and oak woodlands, but forages over wider, more open areas. Often utilizes abandoned nests of other species; may also nest in cavities.	Nocturnal. Year-round.	**Segment 1 – 2: Not likely to occur.** Suitable habitat lacking. **Segment 3 – 4: Low.** Species not observed during surveys (LSA, 2013b). Suitable habitat in the Project Study Area is potentially present. **Segment 5 – 6: Not likely to occur.** Suitable habitat lacking.

Table Ap.7-2. Special-Status Wildlife Species Potentially Occurring Or Known to Occur

Species	Status		Habitat and Distribution	Activity Period[1]	Occurrence Probability
Athene cunicularia Burrowing owl	FED: CA: BLM: MSHCP:	None CSC S WRS/CV	Open country in much of North and South America. Usually occupies ground squirrel burrows in open, dry grasslands, agricultural and range lands, railroad rights-of-way, and margins of highways, golf courses, and airports. Often utilizes man-made structures, such as earthen berms, cement culverts, cement, asphalt, rock, or wood debris piles. Avoids thick, tall vegetation, brush, and trees, but may occur in areas where brush or tree cover is less than 30 percent.	Crepuscular. Year-round.	**Segment 1: Moderate.** Potentially suitable habitat present. Documented occurrences within 5 miles of the ROW (GANDA, 2011). **Segment 2 – 4: High.** Potentially suitable habitat present. Documented occurrences within 5 miles of the ROW (GANDA, 2011). **Segment 5 – 6: Present.** Documented occurrences within 5 miles of the ROW (GANDA, 2011).Owls and burrow sites observed on the Morongo Reservation (LSA, 2010; GANDA, 2010), between Devers Substation and Whitewater River (GANDA, 2011), on Whitewater Hill (AMEC, 2012b), and within the eastern portion of the Project Study Area (LSA, 2012; LSA, 2013a).
TROCHILIDAE (hummingbirds)					
Calypte costae Costa's hummingbird	FED: CA: BLM: MSHCP:	None SA None None	Primarily deserts, arid brushy foothills, and chaparral in the southwestern United States and northwestern Mexico.	Diurnal. Feb–Sep, rare in winter.	**Segment 1 – 2: High.** Suitable habitat potentially present. **Segment 3: Present.** Species observed just east of the San Bernardino Junction (LSA, 2012). **Segment 4: High.** Suitable habitat potentially present. **Segment 5: Present.** Species observed within the Morongo Reservation (LSA, 2010). **Segment 6: High.** Suitable habitat potentially present.
PICIDAE (woodpeckers)					
Picoides nuttallii Nuttall's woodpecker	FED: CA: BLM: MSHCP:	None SA None None	Oak, pine-oak, and riparian woodland in California and northwestern Baja California.	Diurnal. Year-round.	**Segment 1 – 2: Not likely to occur.** Suitable habitat lacking. **Segment 3 – 4: Present.** Pairs observed during the breeding season near San Timoteo Creek and in the canyon just north of Theodore Street in the City of Banning (LSA, 2012). **Segment 5 – 6: Not likely to occur.** Suitable habitat lacking.
Sphyrapicus ruber Red-breasted sapsucker	FED: CA: BLM: MSHCP:	None SA None None	Fairly common winter resident in much of cismontane California. In southern California, breeds in montane forests from 4,000 to 8,000 feet elevation.	Diurnal. Year-round.	**Segment 1 – 6: Present (foraging). Not likely to occur (nesting).** Species observed on or near the proposed ROW, but no suitable nesting habitat present.

Table Ap.7-2. Special-Status Wildlife Species Potentially Occurring Or Known to Occur

Species	Status		Habitat and Distribution	Activity Period[1]	Occurrence Probability
FALCONIDAE (falcons)					
Falco columbarius Merlin	FED: CA: BLM: MSHCP:	None SA/WL None WRC	Open country; breeds in the Holarctic Region and winters south to the tropics. Rare fall migrant and winter visitor to southwestern California.	Diurnal. Sep–Apr.	**Segment 1 – 2: Moderate (wintering).** Suitable habitat potentially present. **Segment 3 – 4: Present (wintering).** Near El Casco (Aspen, 2007) and near Refuse Road, south of San Timoteo Creek Road (LSA, 2013a). **Segment 5 – 6: Moderate (wintering).** Suitable habitat potentially present.
Falco mexicanus Prairie falcon	FED: CA: BLM: MSHCP:	None SA/WL None WRC	Nests on high cliffs. Will occasionally nest in trees or on tall buildings or other structures. Has been reported nesting on transmission towers. May use abandoned nests of other raptors. Forages primarily over open lands. Occurs throughout arid western US and Mexico.	Diurnal. Year-round.	**Segment 1 – 6: Present (foraging). Low (nesting).** Species observed on or near the Project Study Area (LSA, 2013b). Suitable natural nesting habitat limited, but could potentially nest on transmission towers.
Falco peregrinus American peregrine falcon	FED: CA: BLM: MSHCP:	Delisted FP None WRC	Nests on high cliffs, generally near water bodies. Will occasionally nest in tree cavities or on tall buildings or other structures. Has been reported nesting on transmission towers. May use abandoned nests of other raptors. Feeds on birds (especially shorebirds & waterfowl). Widespread, but rare worldwide.	Diurnal. Year-round.	**Segment 1 – 6: Moderate (foraging). Low (nesting).** Species observed on or near the Project Study Area (LSA, 2013b). Suitable natural nesting habitat limited, but could potentially nest on transmission towers.
TYRANNIDAE (tyrant flycatchers)					
Contopus cooperi Olive-sided flycatcher	FED: CA: BLM: MSHCP:	None CSC None None	Summer resident in forest and woodland habitats below 9,000 feet, but not found in deserts or lowland valleys. Nests in large trees, usually conifers, in montane forests. Found in western and portions of central and eastern North America. Winters in South America.	Diurnal. Apr–Oct.	**Segment 1 – 6: Present (migration). Not likely to occur (nesting).** Observed in the Project Study Area (possible migrant; LSA, 2013b), but no suitable nesting habitat present.

Table Ap.7-2. Special-Status Wildlife Species Potentially Occurring Or Known to Occur

Species	Status	Habitat and Distribution	Activity Period[1]	Occurrence Probability
Empidonax traillii extimus Southwestern willow flycatcher	FED: **END** CA: **END** BLM: None MSHCP: WRS/ CV	Rare and local breeder in riparian areas, willows, usually with standing water, in the southwestern United States and formerly northwestern Mexico. Winters in Central and South America.	Diurnal. May–Sep.	**Segment 1 – 2: Low (foraging). Not likely to occur (nesting).** Documented occurrences within 5 miles of the ROW (GANDA, 2011), but suitable nesting habitat probably lacking. **Segment 3 – 4: Moderate (foraging). Low (nesting).** Species observed within 5 miles of the ROW (GANDA, 2011).Some riparian areas on site may be marginally suitable for nesting (LSA, 2013b). Migrant willow flycatcher observed in 2007 probably represents *E. t. brewsteri* (Aspen, 2007). Designated critical habitat occurs within 200 feet of the proposed ROW in San Timoteo Canyon in Segment 3 (LSA, 2013b). **Segment 5 – 6: Not likely to occur (foraging & nesting).** Suitable habitat lacking.
Empidonax traillii brewsteri Little willow flycatcher	FED: None CA: **END** BLM: None MSHCP: None	Nesting range is well to the north of the Project area; occasionally observed locally during migration. Riparian areas and wet meadows with standing water. Winters in South America.	Diurnal. May–Sep.	**Segment 1 – 2: Moderate to high (migration). Not likely to occur (nesting).** **Segment 3 – 4: High (migration). Not likely to occur (nesting).** Outside breeding range. A migrant was observed on or near the Project Study Area near El Casco (Aspen, 2007). **Segment 5 – 6: Moderate to high (migration). Not likely to occur (nesting).**
Pyrocephalus rubinus Vermilion flycatcher	FED: None CA: CSC BLM: None MSHCP: None	Occurs in a wide range of open habitats including arid scrub, agricultural areas, golf courses, grasslands, and riparian woodland, often near streams or open water. Nests in desert riparian habitat adjacent to irrigated fields, pastures, and other open, mesic areas in isolated patches throughout central southern California and along the Colorado River. Ranges from the southwestern United States to central South America. Rare and local in southwestern California.	Diurnal. Fall or winter visitor or rare local breeder.	**Segment 1 – 6: Moderate (migration). Low (nesting).** Suitable nesting habitat in the Project Study Area is limited or absent.

Table Ap.7-2. Special-Status Wildlife Species Potentially Occurring Or Known to Occur

Species	Status	Habitat and Distribution	Activity Period[1]	Occurrence Probability
LANIIDAE (shrikes)				
Lanius ludovicianus Loggerhead shrike	FED: None CA: CSC BLM: None MSHCP: WRC	Prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches. Inhabits open country with short vegetation, pastures, old orchards, cemeteries, golf courses, riparian areas, and open woodlands. Occurs only rarely in heavily urbanized areas, but often found in open cropland. Found in open country in much of North America.	Diurnal. Year-round.	**Segment 1 – 2: High (foraging). Moderate (nesting).** Suitable nesting habitat potentially present. Species observed within 5 miles of the ROW (GANDA, 2011). **Segment 3 – 6: Present (foraging). High (nesting).** Species observed near El Casco Substation (Aspen, 2007), within the Morongo Reservation (LSA, 2010), and near San Gorgonio River and Whitewater Canyon (LSA, 2012; LSA, 2013a). Suitable nesting habitat is present.
VIREONIDAE (vireos)				
Vireo bellii pusillus Least Bell's vireo	FED: **END** CA: **END** BLM: None MSHCP: WRS/CV	Formerly occurred in well-developed riparian areas from north-central California to Baja California. Now absent from northern portions of its range, but populations in southern California are increasing in response to intense management efforts. Winters primarily in western Mexico.	Diurnal. Apr–Sep.	**Segment 1 – 2: Not likely to occur.** Documented occurrences within 5 miles of the ROW (GANDA, 2011), but suitable habitat probably lacking. **Segment 3 – 4: Present.** Territories in riparian habitat associated with San Timoteo Creek (Aspen, 2007; LSA, 2012), and in riparian habitat along Highland Springs Road just south of Beaumont (LSA, 2013a). **Segment 5 – 6: Not likely to occur.** Documented occurrences within 5 miles of the ROW (GANDA, 2011), but suitable habitat probably lacking.
ALAUDIDAE (larks)				
Eremophila alpestris actia California horned lark	FED: None CA: SA/WL BLM: None MSHCP: WRC	Open grasslands and fields, agricultural areas, and open montane grasslands. This subspecies is resident from northern Baja California northward throughout non-desert areas to Humboldt County. During the breeding season, this is the only subspecies of horned lark in non-desert southern California; however, from September through April or early May, other subspecies visit the area.	Diurnal. Year-round.	**Segment 1 – 2: Low.** Suitable habitat potentially present. Documented occurrences within 5 miles of the ROW (GANDA, 2011). **Segment 3 – 5: Present.** Observed near El Casco Substation and nearby agricultural fields (Aspen, 2007) and within the Morongo Reservation (LSA, 2010). **Segment 6: Low.** Suitable habitat probably lacking. No documented occurrences within 5 miles of the ROW (GANDA, 2011).

Table Ap.7-2. Special-Status Wildlife Species Potentially Occurring Or Known to Occur

Species	Status	Habitat and Distribution	Activity Period[1]	Occurrence Probability
HIRUNDINIDAE (swallows and martins)				
Progne subis Purple martin	FED: None CA: CSC BLM: None MSHCP: WRC	Open agricultural areas, towns, and marsh edges. Nesting habitat consists of old sycamores and pines, often within oak woodland or open coniferous forest. Breeds throughout much of North America, but rare and local in southern California. Winters in South America.	Diurnal. Apr–Sep.	**Segment 1 – 2: Moderate (foraging). Low (nesting).** Species observed in Segments 3, 4, and 5, (GANDA, 2011) but suitable nesting habitat is probably limited. **Segment 3 – 5: Present (foraging). Low (nesting).** Species observed in Segments 3, 4, and 5, (GANDA, 2011) but suitable nesting habitat is probably limited. **Segment 6: Moderate (foraging). Low (nesting).** Species observed in Segments 3, 4, and 5, (GANDA, 2011) but suitable nesting habitat is probably limited.
PARIDAE (chickadees, titmice, and relatives)				
Baeolophus inornatus Oak titmouse	FED: None CA: SA BLM: None MSHCP: None	Primarily oak woodland from southern Oregon to southern Baja California. Common resident in much of southern California.	Diurnal. Year-round.	**Segment 1: Low (foraging & nesting).** Suitable habitat lacking. **Segment 2: Low (foraging & nesting).** Suitable habitat potentially present, but limited. **Segment 3 – 4: Present (foraging). High (nesting).** Species observed near San Timoteo Creek (LSA, 2012). **Segment 5 – 6: Not likely to occur (foraging & nesting).** Suitable habitat lacking.
POLIOPTILIDAE (gnatcatchers)				
Polioptila californica californica Coastal California gnatcatcher	FED: **THR** CA: CSC BLM: None MSHCP: WRC	Inhabits coastal sage scrub in low-lying foothills and valleys up to about 1,640 feet elevation in cismontane southwestern California and Baja California.	Diurnal. Year-round.	**Segment 1: Not likely to occur.** No suitable habitat (LSA, 2013b, Appendix H). **Segment 2: High.** Recorded two miles south of Segment 2 near Reche Canyon in 1997 (three pairs) and 2000 (one male) (CNDDB # 542), but not found during protocol surveys in 2012 and 2013 (LSA, 2013b, Appendix H). The proposed ROW goes through designated critical habitat in Segment 2. **Segment 3: Moderate.** Suitable habitat present. Not observed during protocol surveys in 2012 and 2013 (LSA, 2013b, Appendix H). Surveys were done only in the San Bernardino County portion of Segment 3 (LSA, 2013b, Appendix H). **Segment 4: Moderate.** Limited potentially suitable habitat present. One reported occurrence of an individual at Oak Creek development in 1999 (Yamazaki, 2014). **Segment 5 – 6: Not likely to occur.** No suitable habitat and no documented occurrences (GANDA, 2011). Outside known range.

Table Ap.7-2. Special-Status Wildlife Species Potentially Occurring Or Known to Occur

Species	Status		Habitat and Distribution	Activity Period[1]	Occurrence Probability
Polioptila melanura Black-tailed gnatcatcher	FED: CA: BLM: MSHCP:	None SA None None	Nests in wooded desert wash habitat containing mesquite, palo verde, ironwood, and acacia. May also occur in areas with salt cedar, especially when adjacent to native wooded desert wash habitat. Also occurs in desert scrub habitat in winter.	Diurnal. Year-round.	**Segment 1 – 4: Not likely to occur.** No suitable habitat. **Segment 5 – 6: Present.** Observed east of the San Gorgonio River (LSA, 2012).
MIMIDAE (mockingbirds and thrashers)					
Toxostoma bendirei Bendire's thrasher	FED: CA: BLM: MSHCP:	None CSC S None	Spring and summer resident and breeder in flat areas of Joshua tree woodland and desert scrub with high cactus cover. Breeds in southwestern U.S. and Mexico; winters in Arizona, New Mexico, and Mexico.	Diurnal. Spring-summer.	**Segment 1 – 4: Not likely to occur.** No suitable habitat **Segment 5 – 6: Present.** Species observed in or near the Project Study Area (LSA, 2013b).
Toxostoma lecontei Le Conte's thrasher	FED: CA: BLM: MSHCP:	None SA None CV	Inhabits sparsely vegetated desert flats, dunes, alluvial fans, or gently rolling hills having a high proportion of saltbush or cholla often occurring along small washes or sand dunes. Prefers dense thorny shrubs (most often saltbush or cholla) for nesting. Uncommon and local resident in low desert scrub throughout most of the Mojave Desert, extending up into the southwestern corner of the San Joaquin Valley. Breeding range in California extends from these areas into eastern Mojave, north into the Owens Valley and south into the lower Colorado Desert and eastern Mojave. Only the San Joaquin Valley population of this species is considered a BLM Sensitive species or California Species of Concern. Also ranges into southern Nevada, western Arizona, and northwestern Mexico.	Diurnal. Year-round.	**Segment 1 – 4: Not likely to occur.** Suitable habitat lacking. **Segment 5: Present.** Within the Morongo Reservation (LSA, 2010; LSA, 2012). **Segment 6: High.** Suitable habitat present. Documented occurrences within 5 miles of the ROW (GANDA, 2011).
PARULIDAE (wood-warblers)					
Icteria virens Yellow-breasted chat	FED: CA: BLM: MSHCP:	None CSC None WRC/ CV	Riparian thickets of willow, brushy tangles near watercourses. Nests in riparian woodland throughout much of western North America. Winters in Central America.	Diurnal. Apr–Sep.	**Segment 1 –2: Not likely to occur (foraging & nesting).** Species observed within 5 miles of the ROW (GANDA, 2011), but suitable habitat probably lacking. **Segment 3 – 4: Present (foraging). High (nesting).** Species observed in riparian habitat associated with San Timoteo Creek near El Casco Substation (Aspen, 2007) and just east of San Timoteo Creek (LSA, 2012). **Segment 5 – 6: Not likely to occur (foraging & nesting).** Suitable habitat lacking. No documented occurrences within 5 miles of the ROW (GANDA, 2011).

Table Ap.7-2. Special-Status Wildlife Species Potentially Occurring Or Known to Occur

Species	Status		Habitat and Distribution	Activity Period[1]	Occurrence Probability
Setophaga petechia *(Dendroica petechia)* Yellow warbler	FED: CA: BLM: MSHCP:	None CSC None WRC/ CV	Riparian woodland in the western United States and northwestern Baja California while nesting; more widespread in brushy areas and woodlands during migration. Occurs from western Mexico to northern South America in winter. Migrants are widespread and common.	Diurnal. Apr–Sep in nesting areas. More widespread during migration, rare in winter.	**Segment 1 –2: Low (migration/foraging). Not likely to occur (nesting).** Species observed within 5 miles of the ROW (GANDA, 2011), but suitable nesting habitat probably lacking. **Segment 3 – 4: Present (foraging). High (nesting).** Pairs observed during the breeding season in riparian habitat associated with San Timoteo Creek near El Casco Substation (Aspen, 2007; LSA, 2012). **Segment 5: Low (migration/foraging). Not likely to occur (nesting).** Suitable nesting habitat probably lacking. **Segment 6: Low (migration/foraging). Not likely to occur (nesting).** Species observed within 5 miles of the ROW (GANDA, 2011), but suitable nesting habitat probably lacking.
EMBERIZIDAE (sparrows, buntings, warblers and relatives)					
Aimophila ruficeps canescens Southern California rufous-crowned sparrow	FED: CA: BLM: MSHCP:	None SA/WL None WRC	Steep, rocky coastal sage scrub and open chaparral habitats, particularly scrubby areas mixed with grasslands. From Santa Barbara County to northwestern Baja California.	Diurnal. Year-round.	**Segment 1 – 4: Present.** In Riversidean sage scrub/chaparral habitat within the Morongo Reservation (LSA, 2010), in chaparral just south of the City of Redlands, and in scrubland west of the Morongo Reservation; common throughout western coastal sage scrub habitat within the Project Study Area (LSA, 2012; LSA, 2013a). **Segment 5 – 6: Not likely to occur.** Suitable habitat probably lacking. No documented occurrences within 5 miles of the ROW (GANDA, 2011).
Ammodramus savannarum Grasshopper sparrow	FED: CA: BLM: MSHCP:	None CSC None WRP	Grasslands of North America and northern South America.	Diurnal. Primarily Mar–Aug.	**Segment 1 – 3: Moderate.** Suitable habitat potentially present. **Segment 4 – 5: Present.** Species observed within the Project Study Area just west of the Morongo Reservation (LSA, 2012). **Segment 6: Not likely to occur.** Suitable habitat probably lacking.
Artemisiospiza belli belli *(Amphispiza belli belli)* Bell's sage sparrow	FED: CA: BLM: MSHCP:	None SA/WL None WRC	Occupies chaparral and coastal sage scrub from west central California to northwestern Baja California.	Diurnal. Year-round.	**Segment 1 – 4: Moderate.** Suitable habitat potentially present. Documented occurrences within 5 miles of the ROW on segments 1 – 3 (GANDA, 2011). **Segment 5: Present.** Observed on the Morongo Reservation (LSA, 2010). **Segment 6: Low.** Suitable habitat probably lacking. No documented occurrences within 5 miles of the ROW (GANDA, 2011).

Table Ap.7-2. Special-Status Wildlife Species Potentially Occurring Or Known to Occur

Species	Status		Habitat and Distribution	Activity Period[1]	Occurrence Probability
Chondestes grammacus Lark sparrow	FED: CA: BLM: MSHCP:	None SA None None	Open areas with scattered shrubs or trees. Breeds throughout much of western North America and winters from the southern United States to southern Mexico.	Diurnal. Year-round.	**Segment 1 – 2: Moderate (foraging & nesting).** Suitable nesting habitat potentially present. **Segment 3 – 4: Present (foraging). High (nesting).** Species observed in the canyon just north of Theodore Street in the City of Banning, and just east of the San Timoteo Landfill in San Bernardino County (LSA, 2012). **Segment 5 – 6: Low (foraging & nesting).** Suitable nesting habitat potentially present, but breeds only locally in deserts.
Pooecetes gramineus affinis Oregon vesper sparrow	FED: CA: BLM: MSHCP:	None CSC None None	A grassland obligate, breeding in western Washington, Oregon, and extreme northwestern California and wintering primarily in southwestern California.	Diurnal. Sep–Apr.	**Segment 1 – 4: Moderate.** Vesper sparrows were observed during 2012 surveys, but subspecies identification is difficult and the subspecies *P. g. confinis* is believed to be the more numerous subspecies found in the vicinity of the Project Study Area (LSA, 2012). **Segment 5 – 6: Not likely to occur.** Suitable habitat probably lacking.
Spizella breweri Brewer's sparrow	FED: CA: BLM: MSHCP:	None SA None None	Inhabits brushland, primarily sagebrush flats. Breeds in the western United States and Canada and winters in the southwestern United States and western Mexico. In California, winters in eastern portions of San Bernardino, Riverside, and San Diego Counties and in Imperial County; breeds further north.	Diurnal. Primarily Sep–Apr in Project area.	**Segment 1 – 6. High (migration/foraging). Not likely to occur (nesting).** Common during migration and winter, but nesting is not expected.
ICTERIDAE (blackbirds, orioles, and relatives)					
Agelaius tricolor Tricolored blackbird	FED: CA: BLM: MSHCP:	None CSC S WRC	Open country in western Oregon, California, and northwestern Baja California. Breeds near fresh water, preferably in emergent wetland with tall, dense cattails or tules, but also in thickets of willow, blackberry, wild rose, tall herbs and forages in grassland and cropland habitats. Seeks cover for roosting in emergent wetland vegetation, especially cattails and tules, and also in trees and shrubs.	Diurnal. Year-round.	**Segment 1 – 6: Present (foraging). Not likely to occur (nesting colony).** Foraging birds were observed (LSA, 2012), but suitable nesting habitat probably limited or absent.

Table Ap.7-2. Special-Status Wildlife Species Potentially Occurring Or Known to Occur

Species	Status	Habitat and Distribution	Activity Period[1]	Occurrence Probability
FRINGILLIDAE (finches)				
Spinus lawrencei Lawrence's goldfinch	FED: None CA: SA BLM: None MSHCP: None	Oak woodland, chaparral, riparian woodland, and other habitats in arid regions, usually near water. From northern California to northern Baja California, but periodically wandering throughout much of western North America.	Diurnal. Fairly common Apr–Aug, uncommon Sep–Mar.	**Segment 1 – 2: Moderate (foraging & nesting).** Suitable nesting habitat potentially present. Species observed within 5 miles of the ROW (GANDA, 2011). **Segment 3 – 4: Present (foraging). High (nesting).** Species observed in the canyon just north of Theodore Street in the City of Banning and at the end of Pilgrim Road south of Redlands. (LSA, 2012). **Segment 5 – 6: Low (foraging & nesting).** Suitable habitat probably lacking.
MAMMALS				
PHYLLOSTOMIDAE (leaf-nosed bats)				
Macrotus californicus California leaf-nosed bat	FED: None CA: CSC BLM: S MSHCP: None	Occurs from northern Nevada, southern California, and western Arizona south to southern Baja California and Sonora. In California, these bats primarily occupy low-lying desert areas, where they roost in caves, mines, and old buildings. Historic records extend west to near Chatsworth, Los Angeles County, but most populations from the California coastal basins are believed to be extirpated (Williams, 1986). Most current records are from mountain ranges near the Colorado River. Sensitive to roost disturbance.	Nocturnal. Year-round.	**Segment 1 – 6: Not likely to occur.** Project Study Area likely outside of current range.
VESPERTILIONIDAE (evening bats)				
Antrozous pallidus Pallid bat	FED: None CA: CSC BLM: S MSHCP: None	Varied habitats in western North America, including grasslands, shrublands, woodlands, deserts, and forest. Primarily day roosts in bridges, hollows and crevices of trees, or buildings. Occasionally roosts in mines, caves, and crevices in cliffs and rocks. Night roosts may be more open sites, such as porches, open buildings, and bridges.	Nocturnal. Year-round.	**Segment 1 – 6: High.** Suitable trees and structures for day roosting present. Likely forages.in Project Study Area (LSA, 2013b). Documented occurrences within 5 miles of the ROW on Segments 1 – 3 (GANDA, 2011).

Table Ap.7-2. Special-Status Wildlife Species Potentially Occurring Or Known to Occur

Species	Status		Habitat and Distribution	Activity Period[1]	Occurrence Probability
Corynorhinus townsendii Townsend's big-eared bat	FED: CA: BLM: MSHCP:	None CSC S None	Ranges from southwestern Canada through the western United States to southern Mexico. Requires caves, mines, tunnels, buildings, or other similar structures for roosting. Occasionally roosts in hollow spaces of bridges or buildings or hollow trees. Highly sensitive to disturbance. Found in all but alpine and subalpine habitats; most abundant in mesic habitats. Extremely sensitive to disturbance of roosting sites. Feeds primarily on small moths.	Nocturnal. Year-round, generally hibernates Oct-Apr.	**Segment 1 – 6: Low.** Limited suitable day roosting habitat found in or adjacent to Project Study Area. May forage in Project Study Area (LSA, 2013b).
Euderma maculatum Spotted bat	FED: CA: BLM: MSHCP:	None CSC S None	Found in various communities including desert scrub, pinyon-juniper woodland, ponderosa pine forest, mixed conifer forest, canyons, cliffs, riparian areas, fields, and open pasture at scattered localities in western North America from southern British Columbia to north-central Mexico. Roosts in cracks, crevices, and caves, usually on exposed cliff faces. Poorly known. Wanders widely and through varied habitats when foraging.	Nocturnal. Year-round.	**Segment 1 – 6: Low.** Limited suitable day roosting habitat in or adjacent to Project Study Area. May forage in Project Study Area (LSA, 2013b).
Lasiurus blossevillii Western red bat	FED: CA: BLM: MSHCP:	None CSC None None	Ranges from southwestern Canada through the western United States and Central America to South America. Forages over a wide range of habitats, but often associated with intact riparian habitat, and particularly with willows, cottonwoods, and sycamores. Typically solitary, roosting in the foliage of trees or shrubs. Day roosts are commonly in edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas.	Nocturnal. Year-round.	**Segment 1 – 6: High.** Suitable large trees present for day roosting in riparian areas and citrus groves. Likely forages in Project Study Area (LSA, 2013b).
Lasiurus cinereus Hoary bat	FED: CA: BLM: MSHCP:	None SA None None	Forages over a wide range of habitats, but prefers open habitats with access to trees, for roosting, and water. Ranges throughout much of North and South America.	Nocturnal. Most common in winter and during migratory periods in Project Study Area.	**Segment 1 – 6: High.** Suitable large oak trees present for day roosting. Likely forages in Project Study Area (LSA, 2013b).

Table Ap.7-2. Special-Status Wildlife Species Potentially Occurring Or Known to Occur

Species	Status		Habitat and Distribution	Activity Period[1]	Occurrence Probability
Lasiurus xanthinus Western yellow bat	FED: CA: BLM: MSHCP:	None CSC None CV	Varied habitats from the southwestern United States to southern Mexico; often associated with palms and desert riparian habitats. In southern California, found in palm oases and in residential areas with untrimmed palm trees. Roosts primarily in trees, especially the dead fronds of palm trees, but has also been documented to roost under the leaves of deciduous trees such as cottonwoods.	Nocturnal. Year-round.	**Segment 1 – 6: High.** Suitable palm trees for day roosting present in project vicinity; may also roost in large-leaved deciduous trees within or adjacent to Project Study Area. Likely forages in Project Study Area (LSA, 2013b). Documented occurrences within 5 miles of the ROW in Segments 1 – 5 (GANDA, 2011).
Myotis ciliolabrum Western small-footed myotis	FED: CA: BLM: MSHCP:	None SA S None	Found across much of North America, primarily in relatively arid wooded and brushy uplands near water. Individuals are known to roost singly or in small groups in cliff and rock crevices, buildings, concrete overpasses, caves, and mines.	Nocturnal. Primarily the warmer months.	**Segment 1 – 6: Moderate.** Potentially suitable habitat present for day roosting. May forage in Project Study Area (LSA, 2013b).
Myotis evotis Long-eared myotis	FED: CA: BLM: MSHCP:	None SA S None	Found throughout much of North America, in semiarid shrublands, chaparral, and agricultural areas, but is usually associated with coniferous forests. Roosts under exfoliating tree bark and in hollow trees, caves, mines, and crevices in cliffs and rocks. Sometimes roosts in buildings and bridges.	Nocturnal. Primarily the warmer months.	**Segment 1 – 6: Moderate.** Marginally suitable trees present for day roosting. May forage in Project Study Area (LSA, 2013b).
Myotis thysanodes Fringed myotis	FED: CA: BLM: MSHCP:	None SA S None	Range is patchy in western North America from sea-level to 9,350 feet; most common at middle elevations. Appears to be most common in drier woodlands, but is found in a wide variety of habitats including desert scrub, mesic coniferous forest, grassland, and sage-grass steppe. Roosts primarily in large trees and snags, as well as in caves and mines. Also roosts in buildings, rock crevices, cliff faces, and bridges.	Nocturnal. Hibernates; primarily active during the warmer months.	**Segment 1 – 6: Low.** Generally rare and local in the area. Potentially suitable roosting habitat found within the Project Study Area; foraging may occur (LSA, 2013b).
Myotis volans Long-legged myotis	FED: CA: BLM: MSHCP:	None SA None None	Widespread in western North America, primarily in coniferous forests, but also occurs seasonally in riparian and desert habitats. Utilizes abandoned buildings, cracks in the ground, cliff crevices, exfoliating tree bark, and hollows in snags as summer day roosts; caves and mine tunnels are used as hibernacula. Commonly forages in and around the forest canopy.	Nocturnal. Primarily the warmer months.	**Segment 1 – 6: Low.** Marginally suitable trees present for day roosting. May forage in Project Study Area (LSA, 2013b).

Table Ap.7-2. Special-Status Wildlife Species Potentially Occurring Or Known to Occur

Species	Status	Habitat and Distribution	Activity Period[1]	Occurrence Probability
Myotis yumanensis Yuma myotis	FED: None CA: SA BLM: S MSHCP: None	Occurs in a variety of habitats in western North America, including riparian, arid scrublands and deserts, and forests. Optimal habitats are open forests and woodlands with sources of water over which to feed. Roosts in buildings, mines, caves or crevices, and under bridges. May occasionally roost in swallow nests.	Nocturnal. Primarily the warmer months.	**Segment 1 – 6: High.** Suitable day-roosting habitat present in trees and structures. Likely forages in Project Study Area (LSA, 2013b).
Lasionycteris noctivagans Silver-haired bat	FED: None CA: SA BLM: None MSHCP: None	Roosts in hollow trees, beneath exfoliating bark, in abandoned woodpecker holes, and rarely under rocks. Needs drinking water. Primarily a coastal and montane forest dweller feeding over streams, ponds, and open brushy areas. Much of North America north of Mexico. May make long migratory flights to hibernation sites. California bats likely winter in Mexico. May be found anywhere in California during spring and fall migrations.	Nocturnal. Year-round.	**Segment 1 – 6: Moderate.** Occurs widely during migration (LSA, 2013b).
MOLOSSIDAE (free-tailed bats)				
Eumops perotis Western mastiff bat	FED: None CA: CSC BLM: S MSHCP: None	Ranged historically throughout much of the southwestern United States and northwestern Mexico. In California, most records are from rocky areas at low elevations. Occurs in many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral, etc. Roosts in crevices in vertical cliff faces, high buildings, trees, and tunnels throughout southwestern California. May roost in tall bridges.	Nocturnal. Year-round.	**Segment 1: High.** Suitable day roosting habitat present. Documented occurrences within 5 miles of the ROW (GANDA, 2011). **Segment 2 – 3: Present.** Suitable day roosting habitat present. Forages in the Project Study Area. Audibly detected near the City of Grand Terrace and southwest of El Casco Lakes within the Project Study Area (LSA, 2012). Documented occurrences within 5 miles of the ROW (GANDA, 2011). **Segment 4 – 6: High.** Suitable day roosting habitat present.
Nyctinomops femorosaccus Pocketed free-tailed bat	FED: None CA: CSC BLM: None MSHCP: None	Varied habitats, but usually associated with high cliffs or rocky areas. Spotty distribution, ranging from southern California and southwestern Arizona through central Mexico. Roosts primarily in cliffs/rock crevices; may roost in buildings, rarely in bridges.	Nocturnal. Year-round.	**Segment 1 – 6: Low.** Potentially suitable roosting habitat present for day roosting. May forage in Project Study Area (LSA, 2013b). Documented occurrences within 5 miles of the ROW in Segments 1 – 3 (GANDA, 2011).
Nyctinomops macrotis Big free-tailed bat	FED: None CA: CSC BLM: None MSHCP: None	Mainly inhabits rugged, rocky habitats in arid southwestern North America. Feeds principally on large moths. Roosts primarily in cliffs/rock crevices, and rarely in buildings, caves, and tree cavities. Not known to use bridges for roosting.	Nocturnal. Year-round.	**Segment 1 – 6: Low.** Potentially suitable roosting habitat present for day roosting. May forage in Project Study Area (LSA, 2013b).

Table Ap.7-2. Special-Status Wildlife Species Potentially Occurring Or Known to Occur

Species	Status		Habitat and Distribution	Activity Period[1]	Occurrence Probability
LEPORIDAE (rabbits and hares)					
Lepus californicus bennettii San Diego black-tailed jackrabbit	FED: CA: BLM: MSHCP:	None CSC None WRC	Variety of habitats including herbaceous and desert scrub areas, early stages of open forest and chaparral. Most common in relatively open habitats. Restricted to the cismontane areas of southern California, extending from the coast to the Santa Monica, San Gabriel, San Bernardino, and Santa Rosa Mountain Ranges.	Primarily nocturnal. Year-round.	**Segment 1 – 2: Moderate.** Suitable habitat potentially present. Documented occurrences within 5 miles of the ROW (GANDA, 2011). **Segment 3 – 4: Present.** Observed in several locations near El Casco (Aspen, 2007). Documented occurrences within 5 miles of the ROW (GANDA, 2011). **Segment 5 – 6: Not likely to occur.** Specimens from Cabazon and Whitewater have been identified as the subspecies *L.c. deserticola*, not *L.c. bennettii*.
SCIURIDAE (squirrels and relatives)					
Xerospermophilus tereticaudus chlorus Palm Springs round-tailed ground squirrel	FED: CA: BLM: MSHCP:	None CSC S None	Desert succulent scrub, desert wash, desert scrub, alkali scrub. Prefers open, flat, grassy areas in fine textured, sandy soil; will burrow in man-made levees. Widespread in California deserts, Coachella Valley to Death Valley; formerly considered endemic to mesquite and sandy habitats in Coachella Valley.	Diurnal. Feb–Aug (hibernates Sep–Jan).	**Segment 1 – 4: Not likely to occur.** No suitable habitat. No documented occurrences within 5 miles of the ROW (GANDA, 2011). **Segment 5 – 6: Moderate.** Documented occurrences within 5 miles of the ROW (GANDA, 2011), but may be outside species' current known range. Not observed during 2012 and 2013 surveys (LSA, 2012; LSA, 2013a).
HETEROMYIDAE (kangaroo rats, pocket mice and kangaroo mice)					
Chaetodipus fallax fallax Northwestern San Diego pocket mouse	FED: CA: BLM: MSHCP:	None CSC None WRC	Found in sandy herbaceous areas, usually associated with rocks or coarse gravel in coastal scrub, chaparral, grasslands, and sagebrush, from Los Angeles County through southwestern San Bernardino, western Riverside, and San Diego Counties to northern Baja California. The northwestern San Diego pocket mouse and pallid San Diego pocket mouse are difficult to distinguish in the field and their ranges overlap.	Nocturnal. Year-round.	**Segment 1 – 5: Present.** Along Smith Creek near El Casco Substation (Aspen, 2007). Also observed in the Badlands generally southeast of Loma Linda and south of Redlands, between Beaumont and Cherry Valley, and north of Banning (LSA 2012; LSA, 2013a). Found along most of the proposed ROW during trapping studies (LSA, 2013b, Appendix L). **Segment 6: Not likely to occur.** San Diego pocket mice found along this segment are likely the pallid subspecies (LSA, 2013b).

Table Ap.7-2. Special-Status Wildlife Species Potentially Occurring Or Known to Occur

Species	Status		Habitat and Distribution	Activity Period[1]	Occurrence Probability
Chaetodipus fallax pallidus Pallid San Diego pocket mouse	FED: CA: BLM: MSHCP:	None CSC None None	Found in sandy herbaceous areas, usually associated with rocks or coarse gravel in desert wash, desert scrub, desert succulent scrub, and pinyon-juniper woodland. Restricted to southwestern California from southwestern San Bernardino County to eastern San Diego and western Imperial Counties. The northwestern San Diego pocket mouse and pallid San Diego pocket mouse are difficult to distinguish in the field and their ranges overlap.	Nocturnal. Year-round.	**Segment 1 – 4: Not likely to occur.** San Diego pocket mice found along these segments are likely the northwestern subspecies (LSA, 2013b). **Segment 5 – 6: Present.** Observed from Cabazon eastward within the Project Study Area (LSA, 2012; LSA, 2013b, Appendix L).
Dipodomys stephensi Stephens' kangaroo rat	FED: CA: BLM: MSHCP:	**END** **THR** None WRC	Found in plant communities transitional between grassland and coastal sage scrub, with perennial vegetation cover of less than 50%. Most commonly associated with mugwort, California buckwheat, and filaree. Requires well-drained soils with compaction characteristics suitable for burrow construction. Not found in soils that are highly rocky, less than 20 inches deep, or heavily alkaline or clay, or in areas exceeding 25% slope. Occurs only in western Riverside County, northern San Diego County, and extreme southern San Bernardino County, below 3,000 feet elevation. In northwestern Riverside County, known only from east of Interstate 15. Reaches its northwest limit in south Norco, southeast Riverside, and in the Reche Canyon area of Riverside County and extreme southern San Bernardino County.	Nocturnal. Year-round.	**Segment 1 – 2: Moderate.** Potentially suitable habitat present, but not captured during 2012 and 2013 trapping surveys. Documented occurrences within 5 miles of the ROW (GANDA, 2011). **Segment 3: Present.** One specimen found outside of the 100-foot Project Study Area buffer at the end of Pilgrim Road south of Redlands. (LSA, 2012). Documented occurrences within 5 miles of the ROW (GANDA, 2011). **Segment 4: Moderate.** Potentially suitable habitat present, but not captured during 2012 and 2013 trapping surveys **Segment 5 – 6: Not likely to occur.** Suitable habitat lacking.
Perognathus longimembris bangsii Palm Springs pocket mouse	FED: CA: BLM: MSHCP:	None CSC S CV	Primary habitat in the Coachella Valley is dunes and mesquite hummocks associated with honey mesquite and, to a lesser extent, dunes and hummocks associated with creosote or other vegetation. Its range in the Coachella Valley extends from Joshua Tree National Park southward, west to San Gorgonio Pass, and south to Borrego Springs and the east side of San Felipe Narrows, in Riverside, San Diego, and Imperial Counties.	Nocturnal. Primarily spring through fall.	**Segment 1 – 4: Not likely to occur.** Suitable habitat lacking and outside species' current known range. No documented occurrences within 5 miles of the ROW (GANDA, 2011). **Segment 5: Moderate.** Potentially suitable habitat present, but not captured during 2012 and 2013 trapping surveys. No documented occurrences within 5 miles of the ROW (GANDA, 2011). **Segment 6: Present.** Between Whitewater Canyon and the eastern terminus of the Project Study Area (LSA, 2012). Documented occurrences within 5 miles of the ROW (GANDA, 2011).

Table Ap.7-2. Special-Status Wildlife Species Potentially Occurring Or Known to Occur

Species	Status		Habitat and Distribution	Activity Period[1]	Occurrence Probability
Perognathus longimembris brevinasus Los Angeles pocket mouse	FED: CA: BLM: MSHCP:	None CSC None WRS	Prefers sandy soil for burrowing, but has been found on gravel washes and stony soils. Found in coastal sage scrub in Los Angeles (formerly), western Riverside, and southwestern San Bernardino Counties.	Nocturnal. Primarily spring through fall.	**Segment 1: Low.** Suitable habitat limited. Documented occurrences within 5 miles of the ROW (GANDA, 2011). **Segment 2: Moderate.** Potentially suitable habitat present, but not captured during 2012 and 2013 trapping surveys. Documented occurrences within 5 miles of the ROW (GANDA, 2011). **Segment 3 – 5: Present.** Near Smith Creek and Montgomery Creek near El Casco Substation (Aspen, 2007) and between Beaumont and Cherry Valley, north of Banning and north and northeast of Cabazon (LSA, 2012; LSA, 2013a). Documented occurrences within 5 miles of the ROW (GANDA, 2011). **Segment 6: Moderate.** Potentially suitable habitat present, but not captured during 2012 and 2013 trapping surveys. No documented occurrences within 5 miles of the ROW (GANDA, 2011).
MURIDAE (mice, rats and voles)					
Neotoma lepida intermedia San Diego desert woodrat	FED: CA: BLM: MSHCP:	None CSC None WRC	Frequents poorly vegetated arid lands and is especially associated with cactus patches. Occurs along the Pacific slope from about San Luis Obispo County to northwest Baja California. Three subspecies of desert woodrat have traditionally been recognized in the area, and the boundary of the range of *N. l. intermedia* is unclear (probably at about Banning and westward). However, the most recent taxonomic work on these animals suggests a species level split within the Project Study Area, with *N. lepida* to the east (desert) and *N. bryanti* to the west (coastal) (Patton et al., 2008). *N. bryanti* and the other two subspecies of *N. lepida* in the area do not currently have any conservation status.	Nocturnal, occasionally crepuscular and diurnal. Year-round.	**Segment 1 – 2: Low.** Suitable habitat potentially present, but limited. **Segment 3 – 4: Present.** In the Badlands, generally southeast of Loma Linda, south of Redlands, and north of Banning in the central portion of the Project Study Area (LSA, 2012). **Segment 5 – 6: Not likely to occur.** Desert woodrats east of Banning are not likely to be this subspecies (LSA, 2013b).
Onychomys torridus ramona Southern grasshopper mouse	FED: CA: BLM: MSHCP:	None CSC None None	Inhabits sandy or gravelly valley floor habitats with friable soils in open and semi-open scrub, including coastal sage scrub, mixed chaparral, low sagebrush, riparian scrub, and annual grassland with scattered shrubs, preferring low to moderate shrub cover. More susceptible to small- and large-scale habitat loss and fragmentation than most other rodents due to its low fecundity, low population density, and large home range size. Arid portions of cismontane southwestern California and northwestern Baja California.	Nocturnal. Year-round.	**Segment 1 – 4: Low.** Suitable habitat present, but not captured during 2012 and 2013 trapping surveys. Documented occurrences within 5 miles of the ROW in Segments 1 – 4 (GANDA, 2011). **Segment 5 – 6: Not likely to occur.** Grasshopper mice captured at the eastern end of the Project Study Area belong to the subspecies *O. t. pulcher* (LSA, 2012).

Table Ap.7-2. Special-Status Wildlife Species Potentially Occurring Or Known to Occur

Species	Status	Habitat and Distribution	Activity Period[1]	Occurrence Probability
CANIDAE (foxes, wolves, and coyotes)				
Vulpes macrotis arsipus Desert kit fox	FED: None CA: PFM BLM: None MSHCP: None	Arid areas with grasslands, agricultural lands, or scrub areas with scattered shrubby vegetation. Requires open, level areas with loose-textured, sandy loamy soils for digging dens. Arid portions of the southwestern United States and northern and central Mexico.	Mainly nocturnal, but may be active in the daytime. Year-round.	**Segment 1 – 3: Not likely to occur.** Outside of known range. **Segment 4 – 6: Moderate.** Potentially suitable habitat present.
PROCYONIDAE (raccoons and relatives)				
Bassariscus astutus Ringtail	FED: None CA: FP BLM: None MSHCP: None	Secretive species of woody and rocky areas of the southwestern United States and most of Mexico.	Nocturnal. Year-round.	**Segment 1 – 6: Moderate.** Suitable habitat present. Most likely in rocky areas (LSA, 2013b).
MUSTELIDAE (weasels and relatives)				
Taxidea taxus American badger	FED: None CA: CSC BLM: None MSHCP: None	Primary habitat requirements seem to be sufficient food and friable soils in relatively open, uncultivated ground in grasslands, woodlands, and desert. Widely distributed in North America.	Primarily nocturnal. Year-round.	**Segment 1 – 6: Moderate.** Suitable habitat present. Widely distributed and known to occur in the area (LSA, 2013b). Documented occurrences within 5 miles of the ROW in Segments 1 – 5 (GANDA, 2011).
BOVIDAE (sheep and relatives)				
Ovis canadensis nelsoni Nelson's bighorn sheep (non-peninsular population)	FED: None CA: SA/FP BLM: S MSHCP: None	Occurs in open, rocky, steep areas with available water and herbaceous forage. Non-peninsular population ranges from San Gorgonio Pass east and north to central California, central Nevada, and northwestern Arizona. The peninsular distinct population segment (DPS) of Nelson's bighorn sheep is listed as federally endangered and state threatened. However, the range of the peninsular population does not extend north of the I-10 and would not be found on or near the proposed ROW (LSA, 2013b).	Diurnal. Year-round.	**Segment 1 – 4. Not likely to occur.** No suitable habitat and outside known range. **Segment 5 – 6: Moderate.** Not observed during surveys conducted from 2011 through 2013. Known to occur in the hills north of the proposed ROW near Whitewater. Suitable foraging habitat potentially present on or near the proposed ROW.

Sources: CNDDB, 2014; Garrett and Dunn, 1981; Patton et al., 2008; USFWS, 2012; Williams, 1986; BRC, 2003; BRC, 2013; eBird, 2014; SCE, 2007; SCE, 2013; WRI, 2013.

1 - Diurnal = active mainly during the day. Nocturnal = active mainly at night. Crepuscular = active mainly at twilight (i.e., dawn and dusk).

Status codes are as listed at the bottom of Table Ap.7-11.

MSHCP Covered Species. All species covered by the CV-MSHCP relevant to the Project Study Area are addressed in the above sections. The WR-MSHCP covers several wildlife species that are not ranked as special-status species by the criteria listed above, and not included in Table Ap.7-3. These species are identified in Ap.7-3, Non-Special-Status Western Riverside County MSHCP Covered Wildlife Species Occurring or Potentially Occurring. This coverage is given by the WR-MSHCP because of regional consideration, association with limited habitats within the WR-MSHCP area, or because they are key species in maintaining species richness in smaller habitat fragments. Covered species that may entail species-specific regulations as set forth by the WR-MSHCP are designated with a conservation status of WRP.

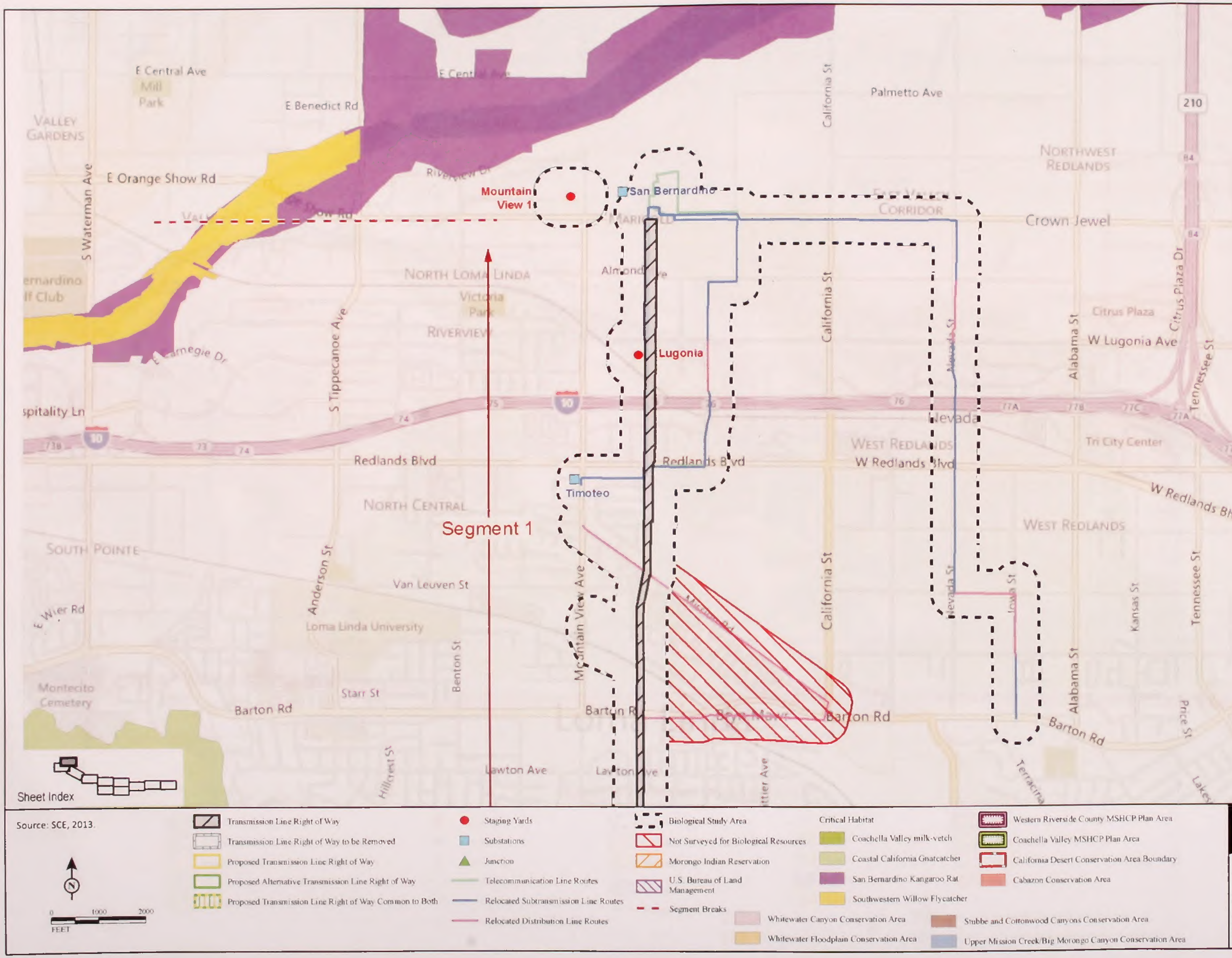
Table Ap.7-3. Non-Special-Status Western Riverside County MSHCP Covered Wildlife Species Occurring Or Potentially Occurring

Species	WR-MSHCP Status	Habitat and Distribution	Activity Period	Occurrence Probability*
BIRDS				
Cathartes aura Turkey vulture	WRC	Occurs in a wide range of habitats in most of North and South America. Usually nests in dark recesses away from human disturbance	Diurnal, year-round.	Moderate. Suitable nesting habitat may be absent, but foraging birds have been observed within WR-MSHCP land, and throughout Project Study Area (GANDA, 2011; LSA, 2012).
Picoides pubescens Downy woodpecker	WRC	Woodlands and forests throughout most of North America north of Mexico.	Diurnal, year-round.	Present. Observed near San Timoteo Creek (LSA, 2012).
Tachycineta bicolor Tree swallow	WRC	Occurs in a wide range of open habitats, usually in the vicinity of water. May forage over any habitat. Breeds across most of North America north of Mexico and winters from the southern U.S. to northern South America.	Diurnal. Primarily winter & migratory periods.	Present. Observed throughout the Project Study Area (LSA, 2013).
Oreothlypis ruficapilla Nashville warbler	WRC	Occurs in a variety of woodland and scrub habitats. Breeds across southern Canada and the northern U.S. and winters primarily in Middle America.	Diurnal. Migratory periods.	High. Expected during migration.
Cardellina pusilla Wilson's warbler	WRC	Breeds in moist thickets and woodlands across much of northern North America. Winters in a variety of shrubby and woodland habitats, primarily in Middle America.	Diurnal. Migratory periods.	Present. Outside known breeding range, but migrants are common throughout the Project Study Area (LSA, 2012).
Melospiza lincolnii Lincoln's sparrow (nesting)	WRP	Breeds across northern North America and winters south to Central America. Migratory and wintering individuals occur in California. Habitat includes brushy areas, thickets, clearings, and scrubby areas. While overwintering, they are primarily ground foragers of small seeds and insects.	Diurnal. Migratory periods.	Not likely to occur (nesting). No suitable nesting habitat present, although migrants and wintering birds observed (LSA, 2012).
MAMMALS				
Dipodomys simulans Dulzura kangaroo rat	WRC	Primarily found in open grassy habitats with friable soils, from southwestern California to Baja California Sur.	Nocturnal. Year-round	Present. Observed in Badlands, generally located southeast of Loma Linda and south of Redlands; between Beaumont and Cherry Valley in the western central portion of the Project Study Area (found east near to Whitewater) (LSA, 2012, 2013).

Table Ap.7-3. Non-Special-Status Western Riverside County MSHCP Covered Wildlife Species Occurring Or Potentially Occurring

Species	WR-MSHCP Status	Habitat and Distribution	Activity Period	Occurrence Probability*
Sylvilagus bachmani Brush rabbit	WRC	Brushy areas from western Oregon through California to Baja California Sur.	Nocturnal & somewhat crepuscular. Year-round.	High. Suitable habitat present within the Study Area.
Lynx rufus Bobcat	WRC	Highly adaptable. Prefers woodlands, both deciduous and coniferous, but can inhabit a variety of regions, such as rocky scrubland. Throughout most of the U.S. and Mexico.	Primarily nocturnal. Year-round.	Present. Observed in riparian habitat associated with San Timoteo Creek near El Casco Substation (Aspen, 2007). Scat was found throughout the Project Study Area (GANDA, 2011). Tracks found near Barton Road in the City of Loma Linda and near the mine in the City of Banning (LSA, 2012). Tracks found just south of Mountain View Road in Loma Linda (LSA, 2013).
Puma concolor Mountain lion	WRC	Occurs in a wide range of habitats from western Canada and the western U.S. to southern South America. Also found in southern Florida, but extirpated from many parts of eastern Canada and the U.S.	Primarily nocturnal & crepuscular. Year-round	Present. Tracks observed in Beaumont just outside of a hugh box culvert along a busy highway (LSA, 2012). Tracks found near San Gorgonio River, in the hills north of North 18th Street in Banning (LSA, 2013).
Canis latrans Coyote	WRC	Found in a wide range of habitats, but prefers more open country. Occurs throughout most of North America from Panama to the Arctic.	Primarily nocturnal & crepuscular. Year-round.	Present. Observed throughout the Project Study Area (LSA, 2012, 2013).
Mustela frenata Long-tailed weasel	WRC	Found in open areas, thickets, and woodlands. Requires a source of water. Southern Canada to Central South America.	Diurnal and nocturnal. Year-round.	Present. Observed near San Timoteo Creek (LSA, 2012).

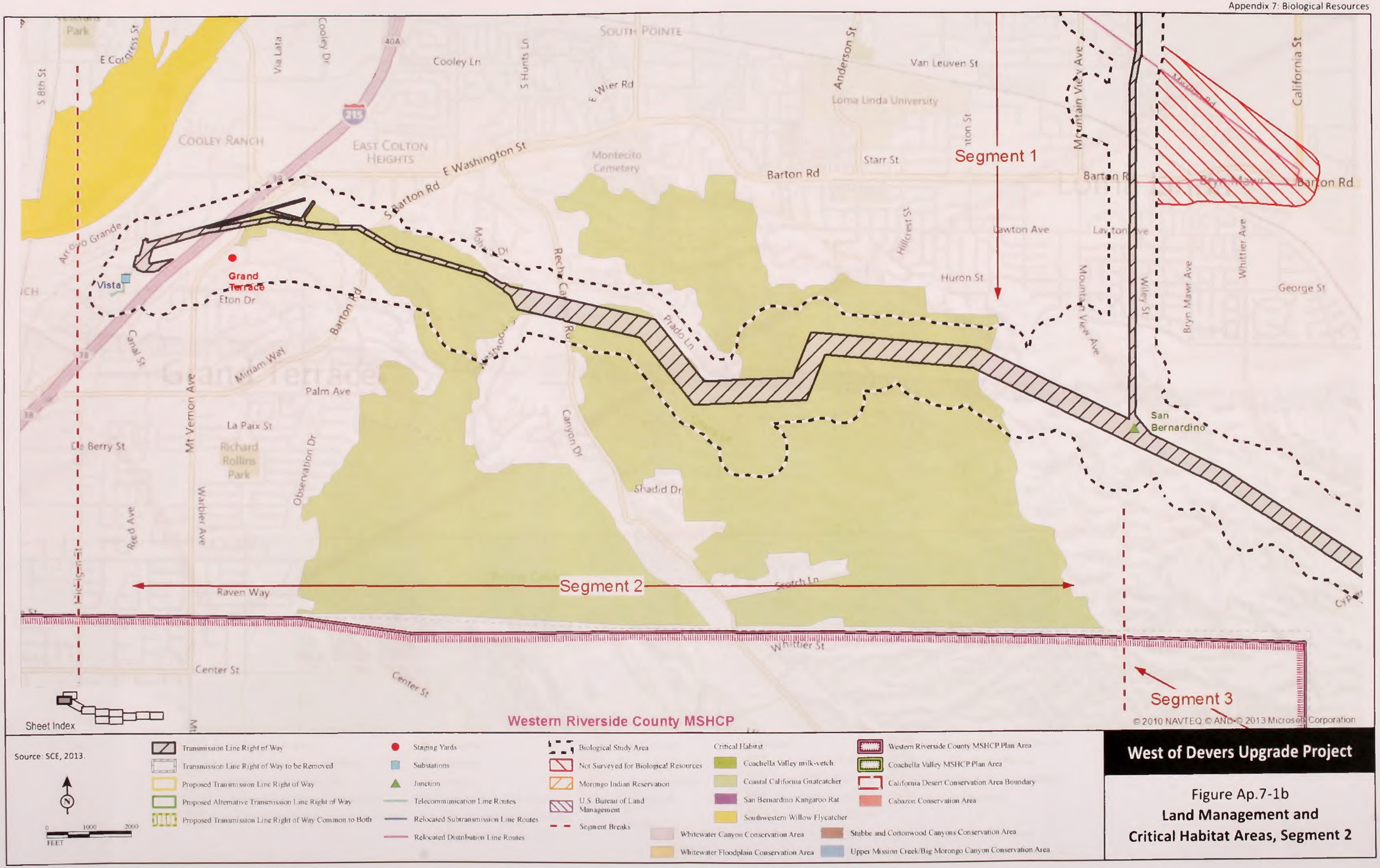
*Citations LSA 2012 and LSA 2013 reference species observations made by LSA staff or subconsultants during 2012 and 2013 general and/or focused surveys conducted for the Proposed Project.
WR-MSHCP: Western Riverside County Multiple Species Habitat Conservation Plan
WRC: species covered under the WR-MSHCP.
WRP: species covered under the WR-MSHCP, considered adequately conserved when specific requirements are met.



Source: SCE, 2013.

West of Devers Upgrade Project

Figure Ap.7-1a
Land Management and Critical Habitat Areas, Segment 1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S 8th St
Via Lata
Cooley Dr
40A
Cooley Ln
S Hunts Ln
SOUTH POINTE
Anderson St
Van Leuven St
Mountain View Ave
California St
E Wier Rd
215
Loma Linda University
COOLEY RANCH
EAST COLTON HEIGHTS
E Washington St
Montecito Cemetery
Starr St
Segment 1
Barton Rd
Barton Rd
Barton Rd
Bryn Mawr
S Barton Rd
Arroyo Grande
Lawton Ave
Lawton Ave
Hillcrest St
Whittier Ave
Vista
Grand Terrace
Eton Dr
Reche Canyon Rd
Prado Ln
Huron St
Bryn Mawr Ave
Wiley St
George St
Barton Rd
Canal St
Miriam Way
Grand Terrace
Palm Ave
Mt Vernon Ave
San Bernardino
La Paix St
De Berry St
Richard Rollins Park
Observation Dr
Canyon Dr
Shadid Dr
Warbler Ave
Reed Ave
Michigan St
Raven Way
Segment 2
Scotch Ln
Whittier St
Center St
Center St
Segment 3
Western Riverside County MSHCP
© 2010 NAVTEQ © AND © 2013 Microsoft Corporation
Sheet Index
Source: SCE, 2013.
N
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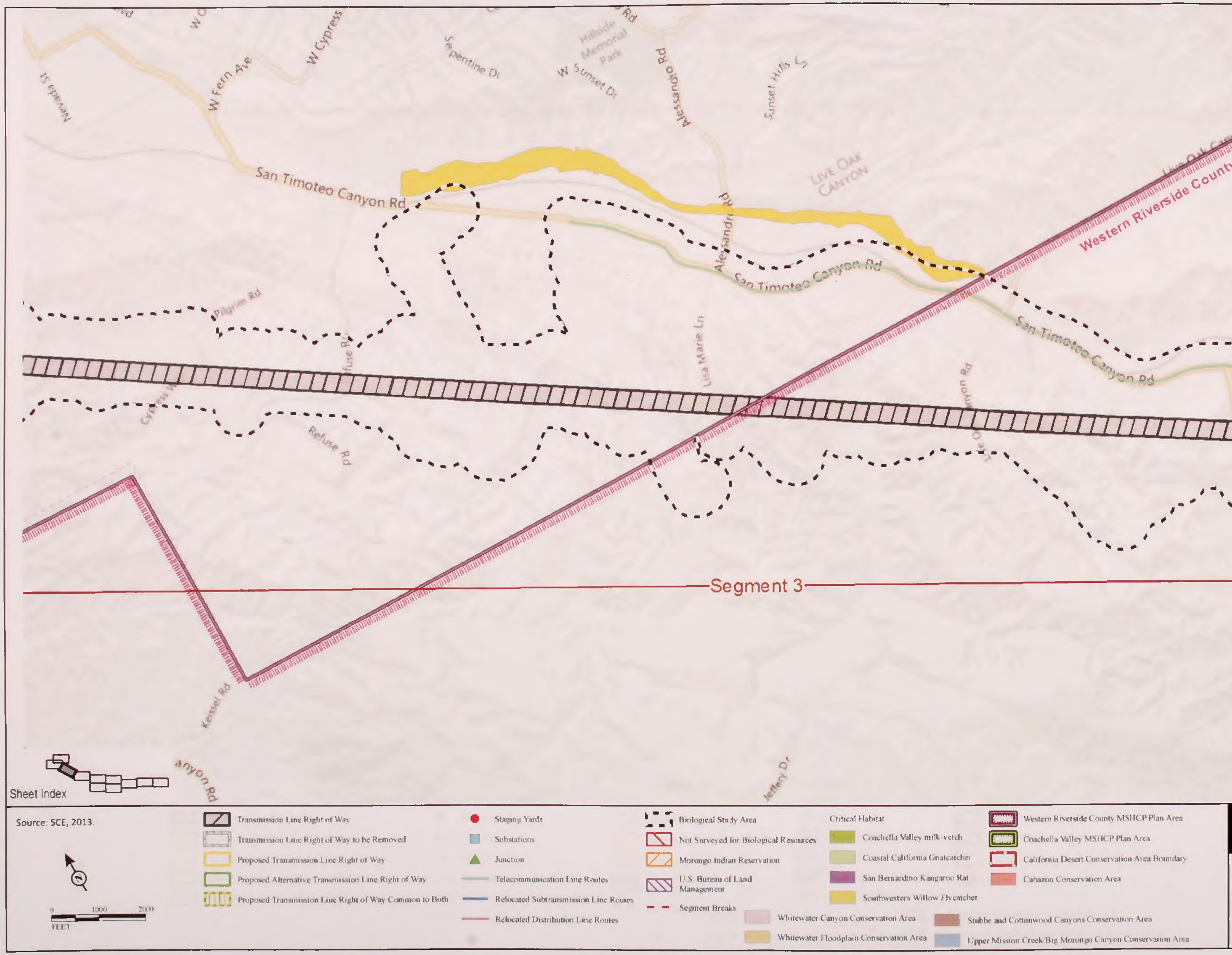
Transmission Line Right of Way
Transmission Line Right of Way to be Removed
Proposed Transmission Line Right of Way
Proposed Alternative Transmission Line Right of Way
Proposed Transmission Line Right of Way Common to Both
Staging Yards
Substations
Junction
Telecommunication Line Routes
Relocated Subtransmission Line Routes
Relocated Distribution Line Routes
Biological Study Area
Not Surveyed for Biological Resources
Morongo Indian Reservation
U.S. Bureau of Land Management
Segment Breaks
Critical Habitat
Coachella Valley milk-vetch
Coastal California Gnatcatcher
San Bernardino Kangaroo Rat
Southwestern Willow Flycatcher
Whitewater Canyon Conservation Area
Whitewater Floodplain Conservation Area
Western Riverside County MSHCP Plan Area
Coachella Valley MSHCP Plan Area
California Desert Conservation Area Boundary
Cabazon Conservation Area
Stubbe and Cottonwood Canyons Conservation Area
Upper Mission Creek/Big Morongo Canyon Conservation Area

West of Devers Upgrade Project

Figure Ap.7-1b
Land Management and Critical Habitat Areas, Segment 2


Nevada St
W Fern Ave
W Cypress
Serpentine Dr
W Sunset Dr
Hillside Memorial Park
Alessandro Rd
Sunset Hills Ln
San Timoteo Canyon Rd
Live Oak Canyon
Live Oak Canyon Rd
Western Riverside County MSHCP
Pilgrim Rd
Refuse Rd
Lisa Marie Ln
Alessandro Rd
San Timoteo Canyon Rd
San Timoteo Canyon Rd
Live Oak Canyon Rd
Cypress
Refuse Rd
Redlands Blvd
Segment 3
Kessel Rd
anyon Rd
Jeffery Dr
Sheet Index
© 2010 NAVTEQ © AND © 2013 Microsoft Corporation
Source: SCE, 2013.
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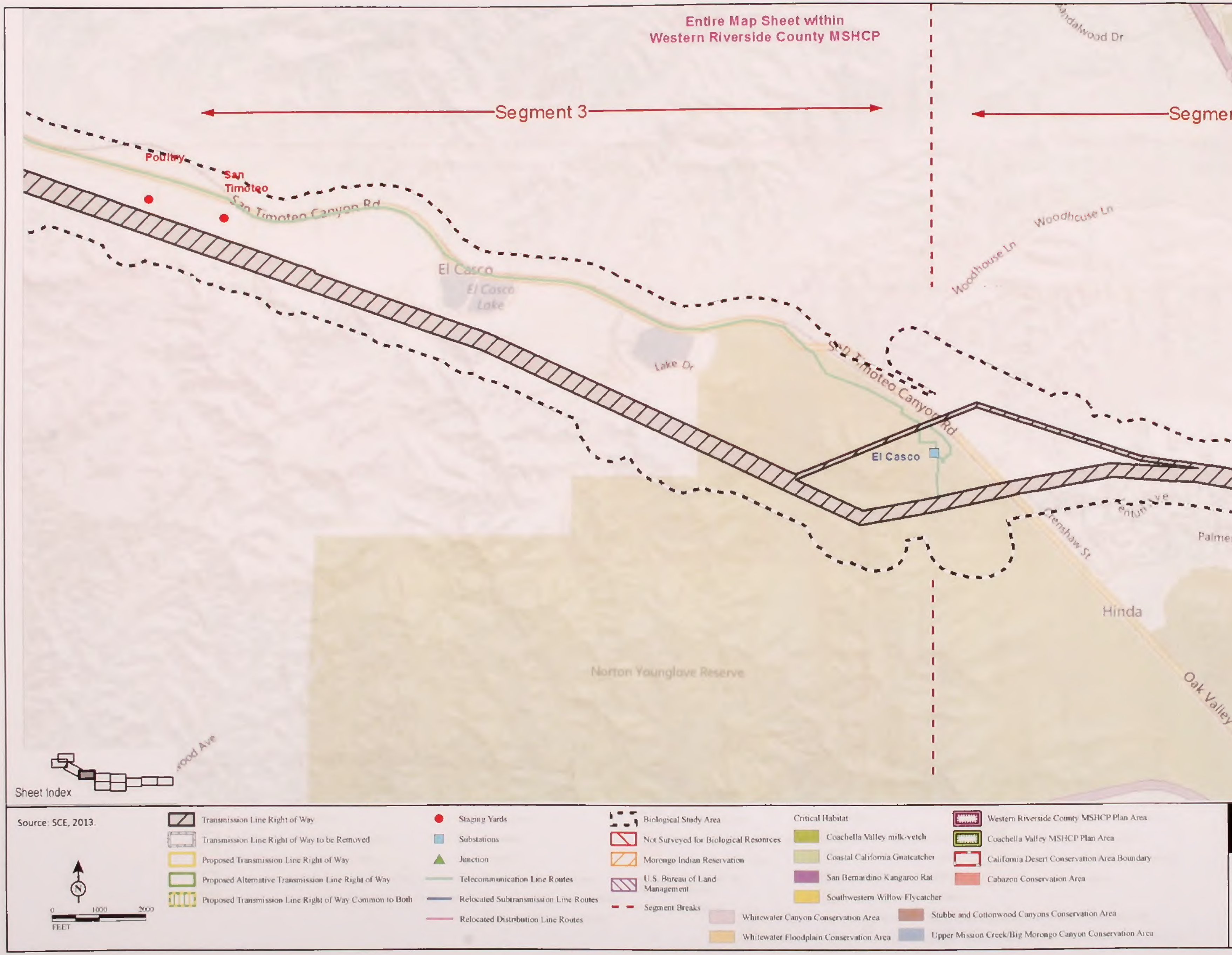
Transmission Line Right of Way
Transmission Line Right of Way to be Removed
Proposed Transmission Line Right of Way
Proposed Alternative Transmission Line Right of Way
Proposed Transmission Line Right of Way Common to Both
Staging Yards
Substations
Junction
Telecommunication Line Routes
Relocated Subtransmission Line Routes
Relocated Distribution Line Routes
Biological Study Area
Not Surveyed for Biological Resources
Morongo Indian Reservation
U.S. Bureau of Land Management
Segment Breaks
Critical Habitat
Coachella Valley milk-vetch
Coastal California Gnatcatcher
San Bernardino Kangaroo Rat
Southwestern Willow Flycatcher
Whitewater Canyon Conservation Area
Whitewater Floodplain Conservation Area
Western Riverside County MSHCP Plan Area
Coachella Valley MSHCP Plan Area
California Desert Conservation Area Boundary
Cabazon Conservation Area
Stubbe and Cottonwood Canyons Conservation Area
Upper Mission Creek/Big Morongo Canyon Conservation Area

West of Devers Upgrade Project

Figure Ap.7-1c
Land Management and Critical Habitat Areas, Segment 3


Entire Map Sheet within Western Riverside County MSHCP
Segment 3
Segment 4
Poultry
San Timoteo
San Timoteo Canyon Rd
El Casco
El Casco Lake
Lake Dr
El Casco
Norton Younglove Reserve
Hinda
Crenshaw St
Oak Valley Pkwy
Palmer Ave
Hogan Dr
Trevino Trail
Tukwet Canyon Golf Club
Calimesa Country Club
Country Club Dr
Sandalwood Dr
Woodhouse Ln
Singleton Rd
Sharondale Rd
Weller Dr
Roberts Rd
10
88
89
90
Sheet Index
© 2010 NAVTEQ © AND © 2013 Microsoft Corporation
Transmission Line Right of Way
Transmission Line Right of Way to be Removed
Proposed Transmission Line Right of Way
Proposed Alternative Transmission Line Right of Way
Proposed Transmission Line Right of Way Common to Both
Staging Yards
Substations
Junction
Telecommunication Line Routes
Relocated Subtransmission Line Routes
Relocated Distribution Line Routes
Biological Study Area
Not Surveyed for Biological Resources
Morongo Indian Reservation
U.S. Bureau of Land Management
Segment Breaks
Critical Habitat
Coachella Valley milk-vetch
Coastal California Gnatcatcher
San Bernardino Kangaroo Rat
Southwestern Willow Flycatcher
Whitewater Canyon Conservation Area
Whitewater Floodplain Conservation Area
Stubbe and Cottonwood Canyons Conservation Area
Upper Mission Creek/Big Morongo Canyon Conservation Area
Western Riverside County MSHCP Plan Area
Coachella Valley MSHCP Plan Area
California Desert Conservation Area Boundary
Cabazon Conservation Area
N
0
1000
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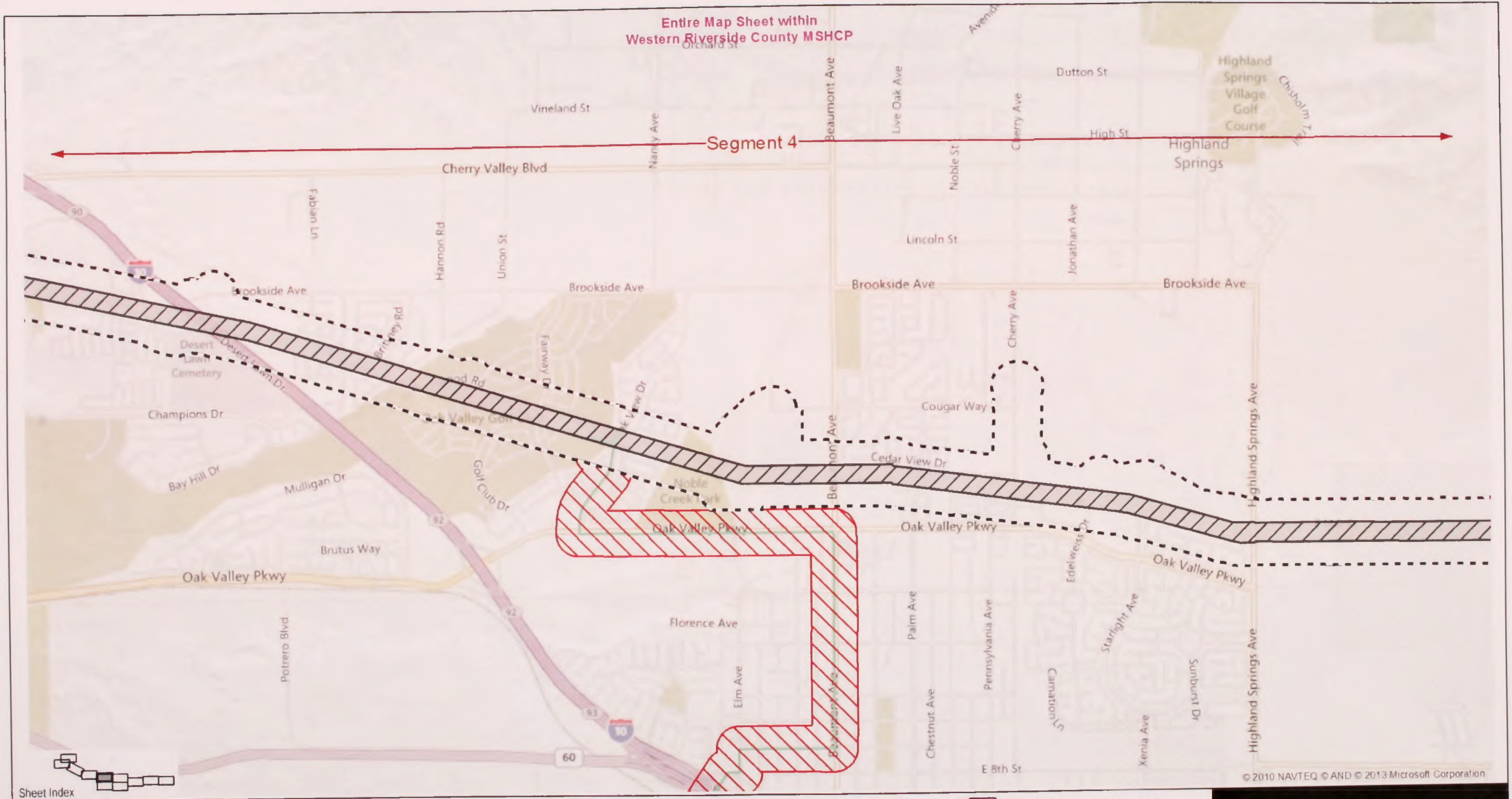
Source: SCE, 2013.

West of Devers Upgrade Project

Figure Ap.7-1d
Land Management and Critical Habitat Areas, Segments 3 & 4



Source: SCE, 2013.

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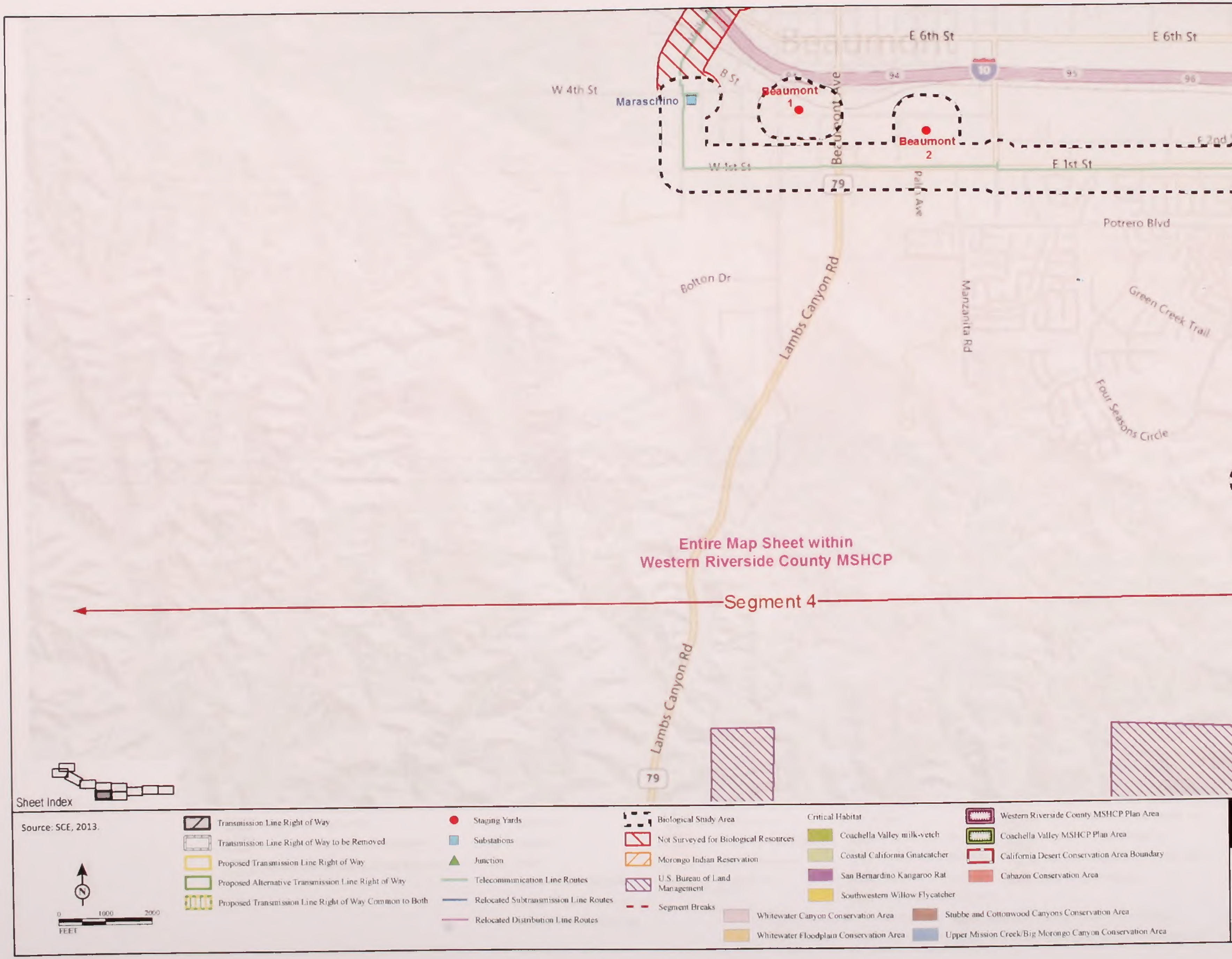
- ▨ Transmission Line Right of Way
- ☐ Transmission Line Right of Way to be Removed
- 🟨 Proposed Transmission Line Right of Way
- 🟩 Proposed Alternative Transmission Line Right of Way
- ▥ Proposed Transmission Line Right of Way Common to Both
- ● Staging Yards
- ■ Substations
- ▲ Junction
- — Telecommunication Line Routes
- — Relocated Subtransmission Line Routes
- — Relocated Distribution Line Routes
- ⬚ Biological Study Area
- ▨ Not Surveyed for Biological Resources
- ▨ Morongo Indian Reservation
- ▨ U.S. Bureau of Land Management
- - - Segment Breaks

Critical Habitat
- 🟩 Coachella Valley milk-vetch
- 🟩 Coastal California Gnatcatcher
- 🟪 San Bernardino Kangaroo Rat
- 🟨 Southwestern Willow Flycatcher
- ▩ Western Riverside County MSHCP Plan Area
- ▩ Coachella Valley MSHCP Plan Area
- ☐ California Desert Conservation Area Boundary
- 🟥 Cabazon Conservation Area
- ■ Whitewater Canyon Conservation Area
- 🟧 Whitewater Floodplain Conservation Area
- 🟫 Stubbe and Cottonwood Canyons Conservation Area
- 🟦 Upper Mission Creek/Big Morongo Canyon Conservation Area

West of Devers Upgrade Project

Figure Ap.7-1e
Land Management and Critical Habitat Areas, Segment 4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E 6th St
W Ramsey St
Beaumont
10
94
95
96
96
B St
W 4th St
Maraschino
Beaumont 1
Beaumont 2
Beaumont Ave
Palm Ave
W 1st St
E 1st St
E 2nd St
79
Brooklawn Dr
W Riviera Ave
La Costa Dr
Potrero Blvd
Sun Lakes Country Club
Country Club Dr
S Riviera Ave
Bolton Dr
Lambs Canyon Rd
Manzanita Rd
Green Creek Trail
Highland Springs Ave
Four Seasons Circle
Fairway Oaks Ave
Entire Map Sheet within Western Riverside County MSHCP
Segment 4
Lambs Canyon Rd
79
Highland Springs
© 2010 NAVTEQ © AND © 2013 Microsoft Corporation
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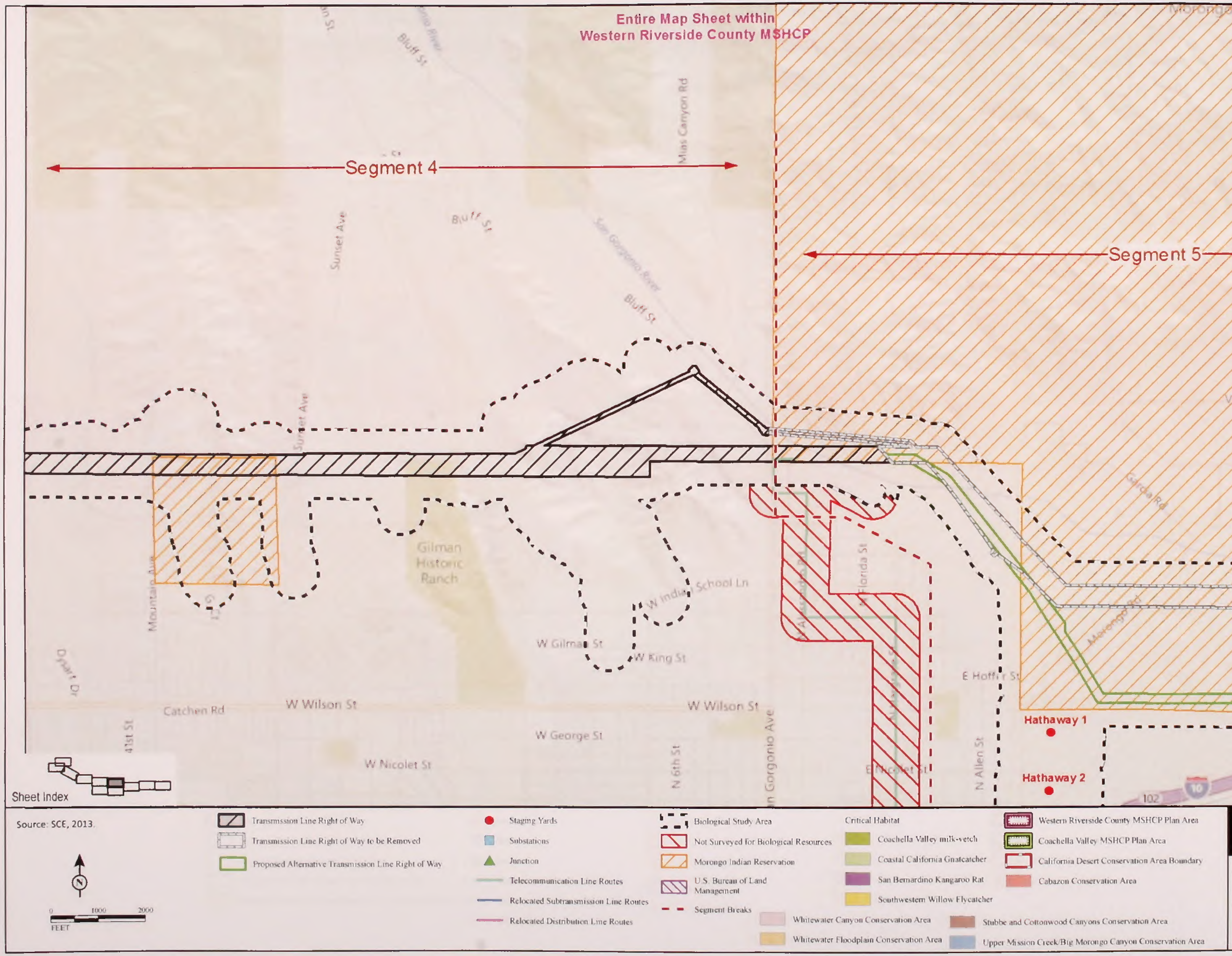
Stubbe and Cottonwood Canyons Conservation Area
Upper Mission Creek/Big Morongo Canyon Conservation Area

West of Devers Upgrade Project

Figure Ap.7-1f
Land Management and
Critical Habitat Areas, Segment 4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Morongo Indian Reservation
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Segment 5
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Sunset Ave
San Gorgonio River
Mias Canyon Rd
Foothill Rd
Verdogo Rd
Potrero Rd
Morongo Rd
Garcia Rd
Cottonwood Rd
Gilman Historic Ranch
W Indian School Ln
W Gilman St
W King St
Mountain Ave
Florida St
E Hoffer St
Hathaway 1
Hathaway 2
Catchen Rd
W Wilson St
W George St
W Nicolet St
E Nicolet St
N 6th St
San Gorgonio Ave
N Allen St
41st St
Dysart Dr
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Stubbe and Cottonwood Canyons Conservation Area
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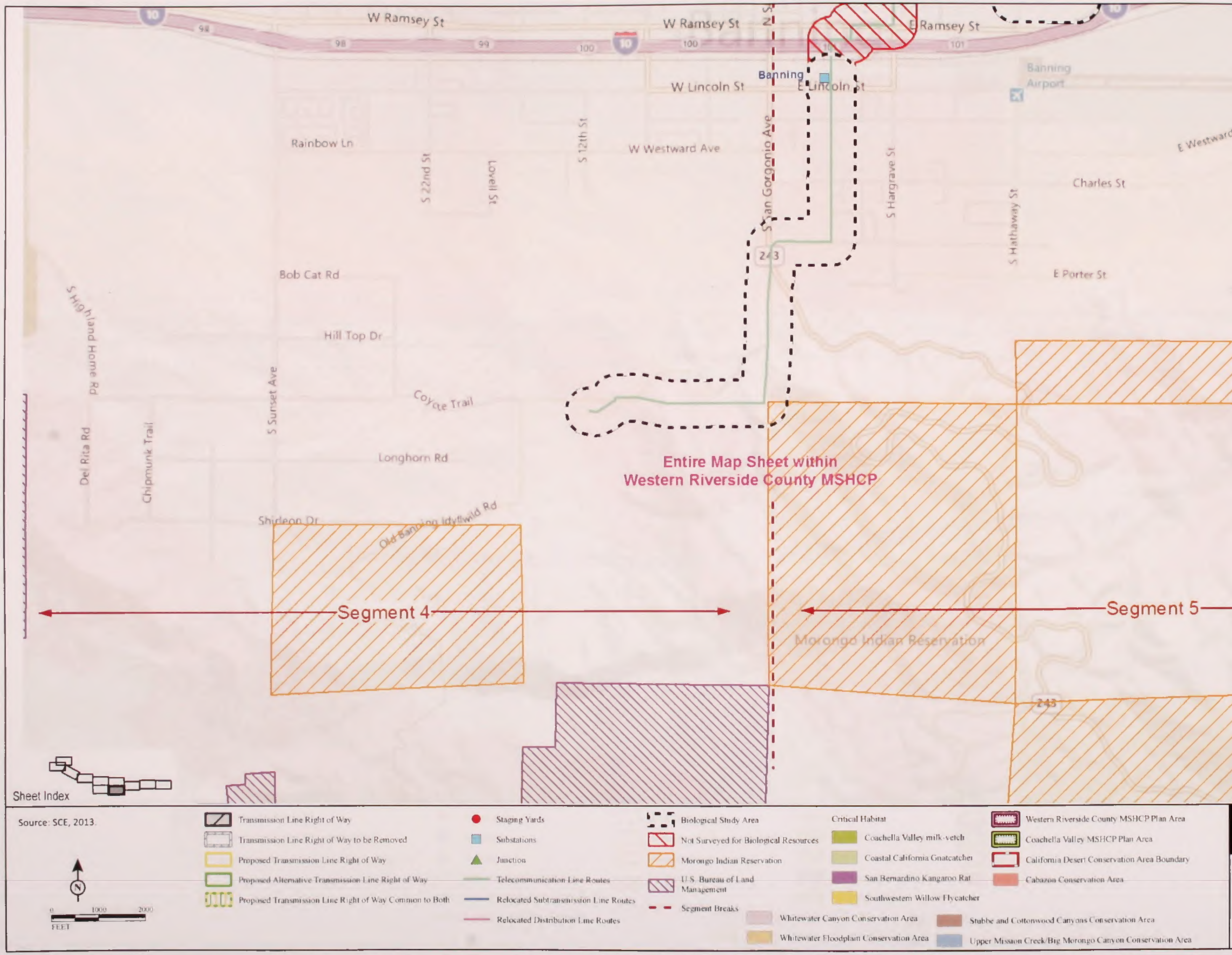
West of Devers Upgrade Project

Figure Ap.7-1g
Land Management and Critical Habitat Areas, Segments 4 & 5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W Ramsey St
E Ramsey St
10
98
99
100
101
Banning
W Lincoln St
E Lincoln St
Banning Airport
Rainbow Ln
W Westward Ave
E Westward Ave
S 22nd St
Lovell St
S 12th St
S San Gorgonio Ave
S Hargrave St
S Hathaway St
Charles St
E Porter St
243
Bob Cat Rd
Hill Top Dr
S Highland Home Rd
S Sunset Ave
Coyote Trail
Longhorn Rd
Del Rita Rd
Chipmunk Trail
Shirleon Dr
Old Banning Idyllwild Rd
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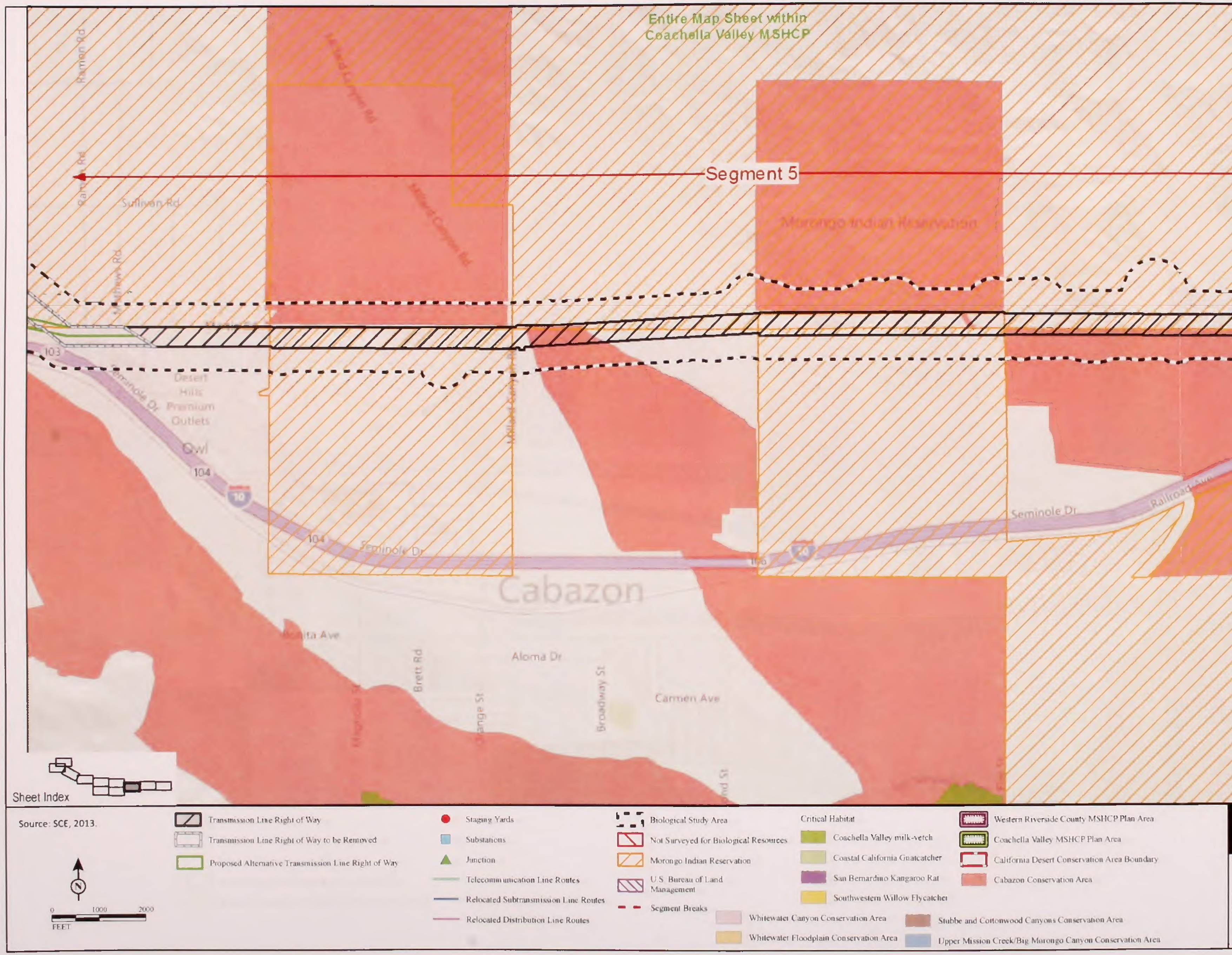
Upper Mission Creek/Big Morongo Canyon Conservation Area

Source: SCE, 2013.

West of Devers Upgrade Project

Figure Ap.7-1h
Land Management and Critical Habitat Areas, Segments 4 & 5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Sullivan Rd
Mathews Rd
Millard Canyon Rd
Morongo Indian Reservation
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103
Seminole Dr
Desert Hills Premium Outlets
Owl
104
10
106
Seminole Dr
Railroad Ave
Cabazon
Bonita Ave
Aloma Dr
Brett Rd
Magnolia St
Orange St
Broadway St
Carmen Ave
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Upper Mission Creek/Big Morongo Canyon Conservation Area

Source: SCE, 2013.

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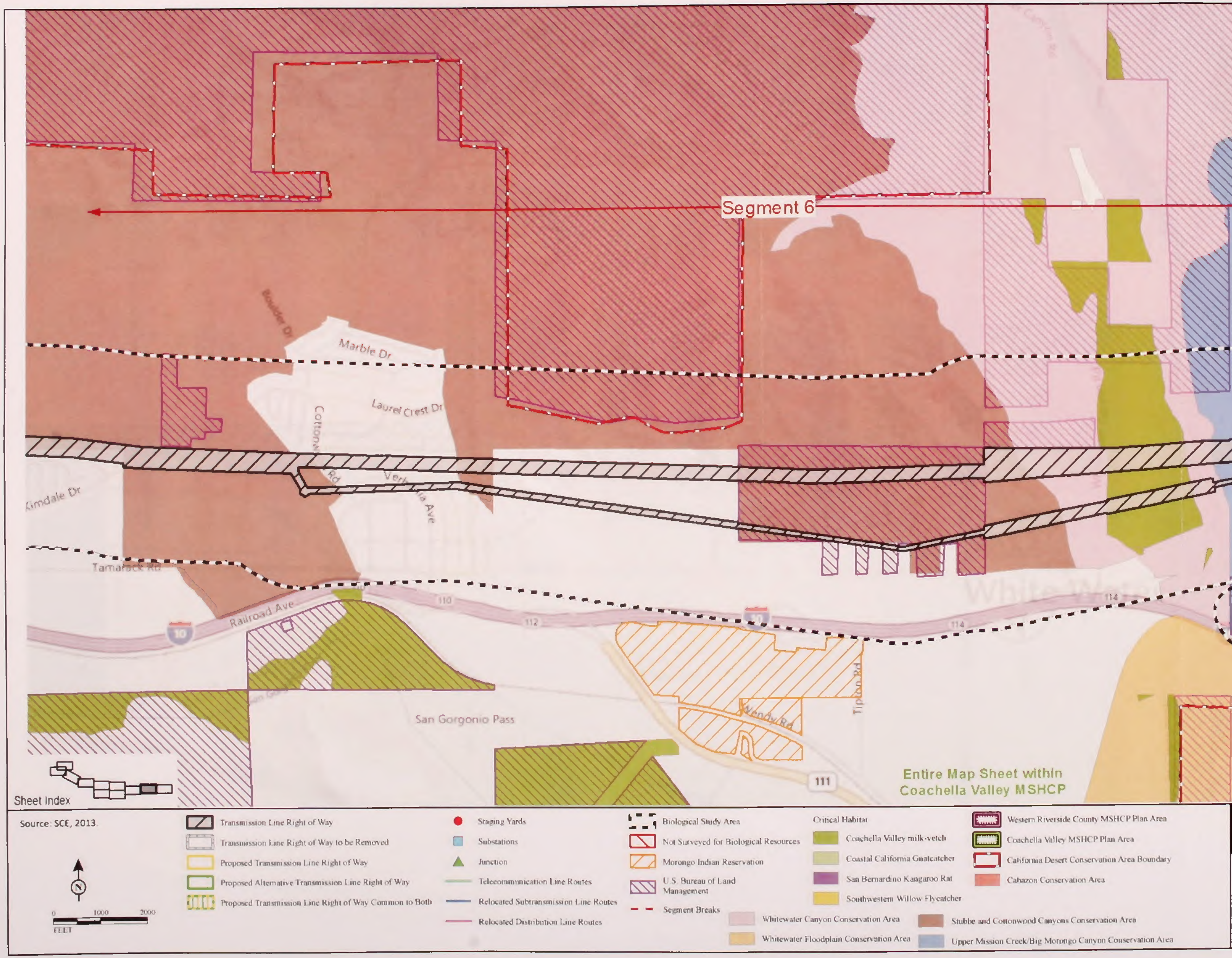
Figure Ap.7-1i
Land Management and Critical Habitat Areas, Segment 5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Marble Dr
Laurel Crest Dr
Cottonwood Rd
Verbena Ave
Kimdale Dr
Tamarack Rd
Railroad Ave
10
110
112
114
White Water
117
Tipton Rd
Wendy Rd
San Gorgonio Pass
111
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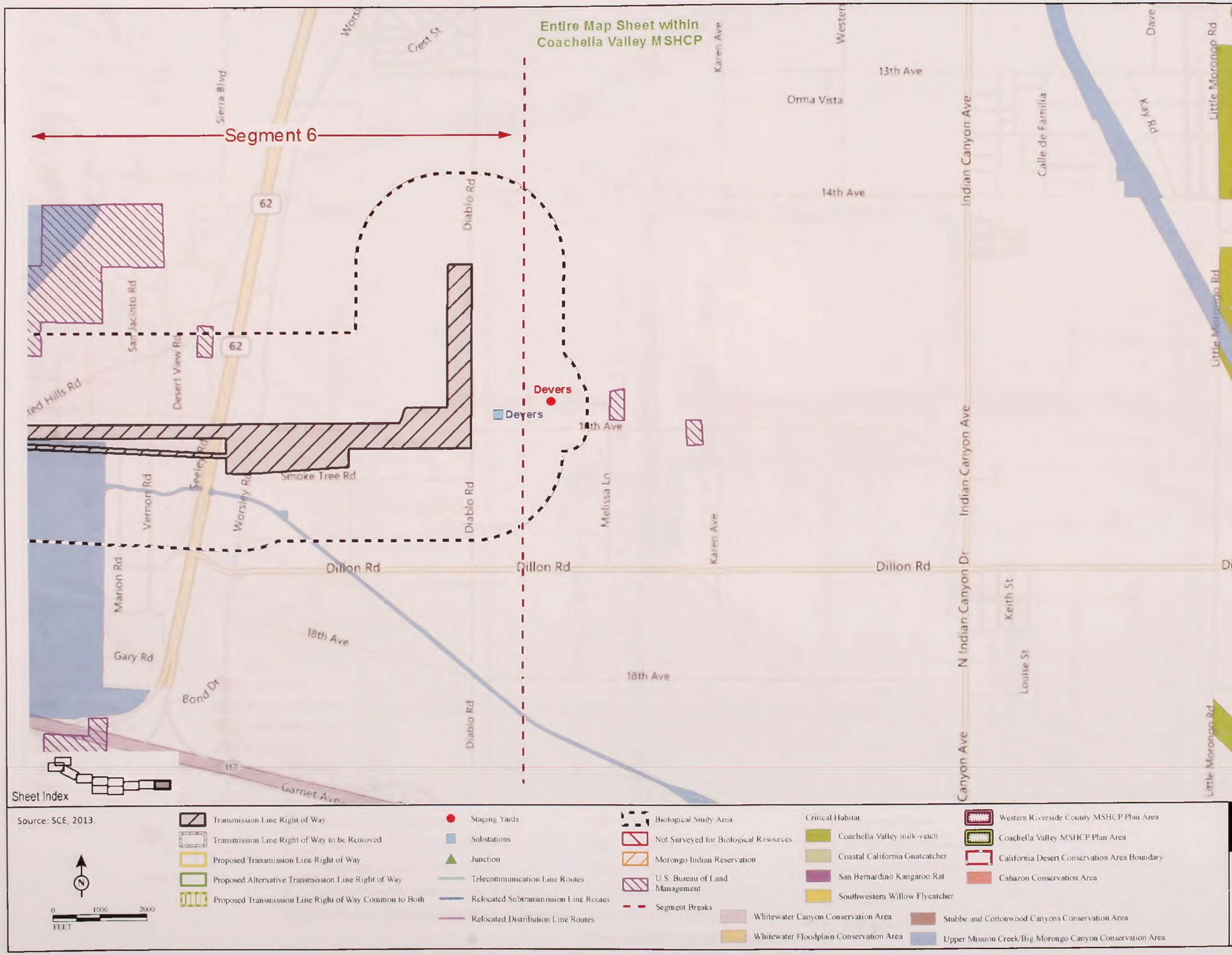
Upper Mission Creek/Big Morongo Canyon Conservation Area

Source: SCE, 2013.

West of Devers Upgrade Project

Figure Ap.7-1j
Land Management and Critical Habitat Areas, Segment 6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Sierra Blvd
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Crest St
Karen Ave
Western
13th Ave
Orma Vista
14th Ave
Indian Canyon Ave
Calle de Familia
Kay Rd
Dave
Little Morongo Rd
Via Lori
West
Hacienda
Via Real
Cuyamaca Dr
Two Bunch Palms Trail
Cabot Rd
West Dr
15th Ave
16th Ave
Diablo Rd
San Jacinto Rd
Desert View Rd
Red Hills Rd
Seeley Rd
Vernon Rd
Smoke Tree Rd
14th Ave
Melissa Ln
Karen Ave
Atlantic Ave
Carol Dr
Dillon Rd
Dillon Rd
Dillon Rd
Dillon Rd
Marion Rd
N Indian Canyon Dr
Keith St
Louise St
18th Ave
18th Ave
18th Ave
Gary Rd
Bond Dr
Garnet Ave
Indian Canyon Ave
Little Morongo Rd
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Source: SCE, 2013.

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Figure Ap.7-1k
Land Management and Critical Habitat Areas, Segment 6

8 ft length

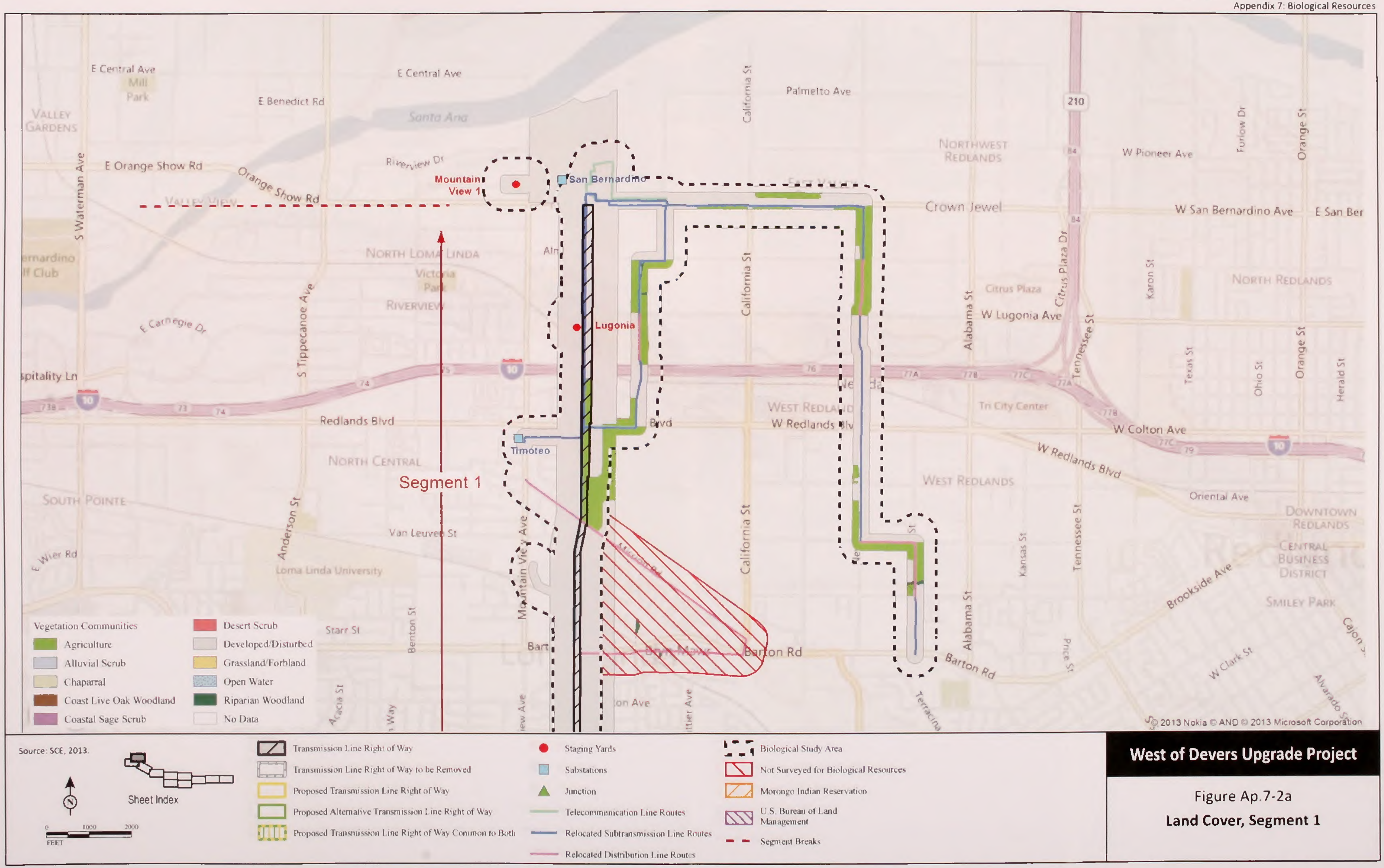

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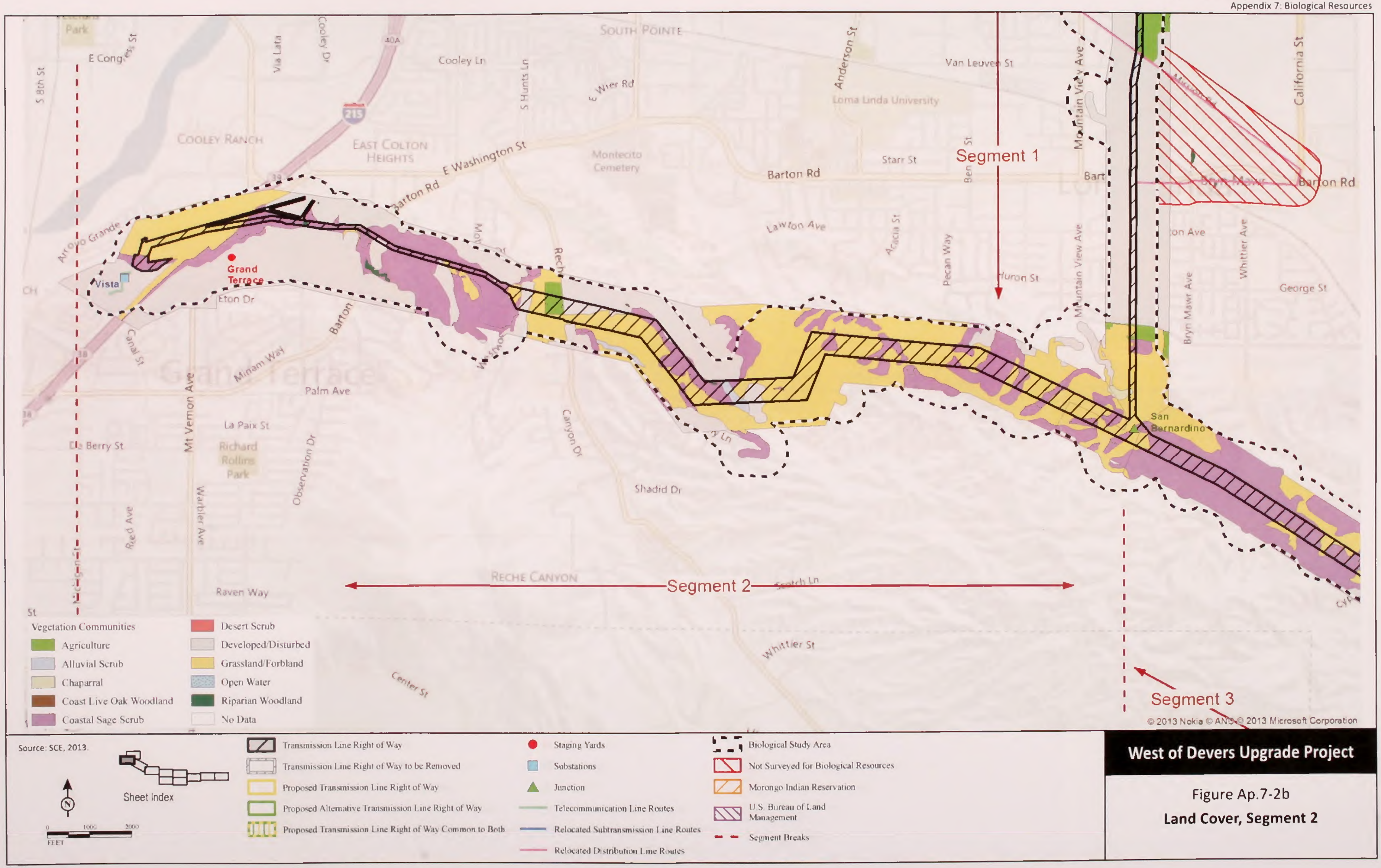
Figure Ap.7-2a

Land Cover, Segment 1

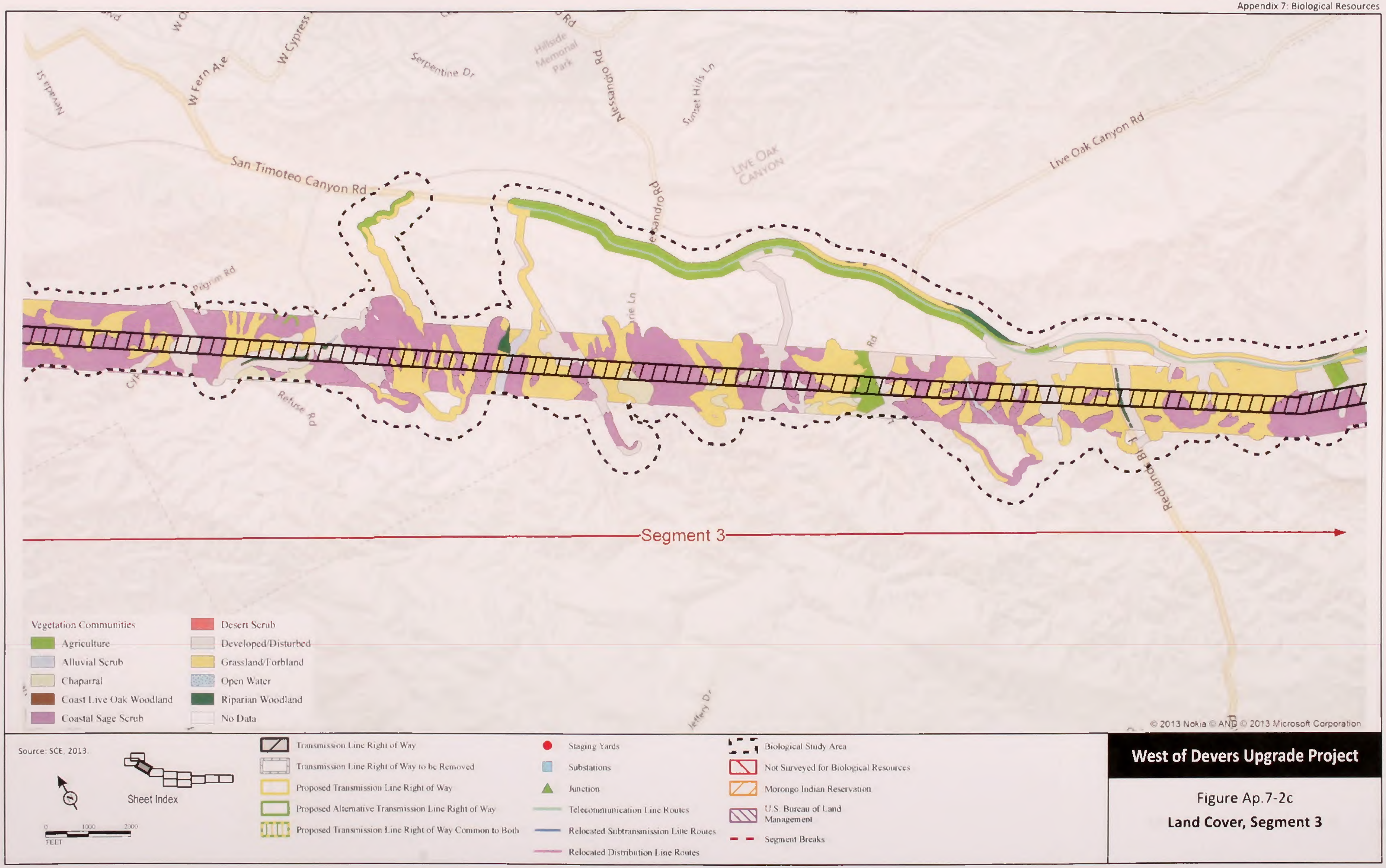


Source: SCE, 2013.

West of Devers Upgrade Project

Figure Ap.7-2b

Land Cover, Segment 2

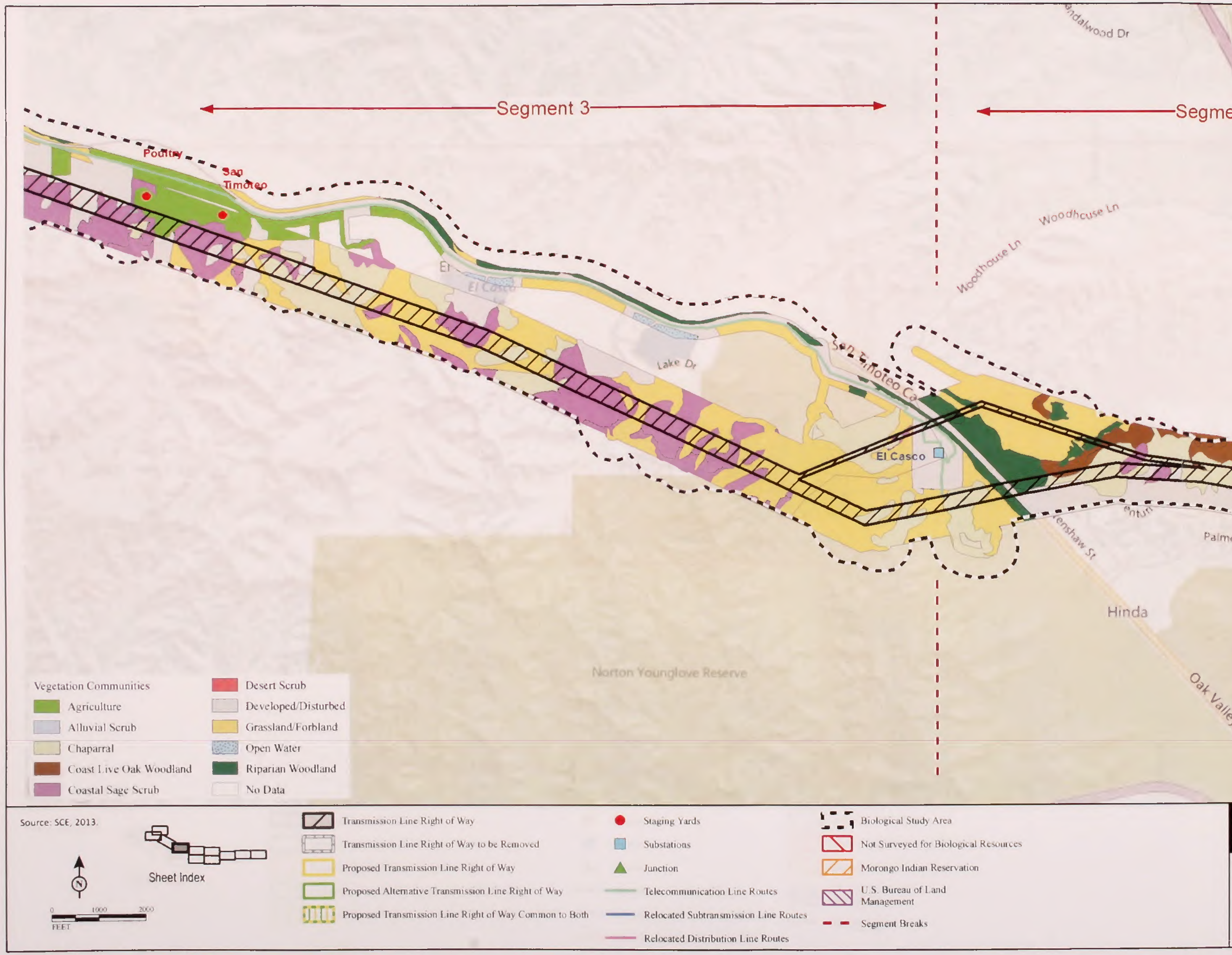


Source: SCE, 2013.

West of Devers Upgrade Project

Figure Ap.7-2c

Land Cover, Segment 3



West of Devers Upgrade Project

Figure Ap.7-2d

Land Cover, Segments 3 & 4

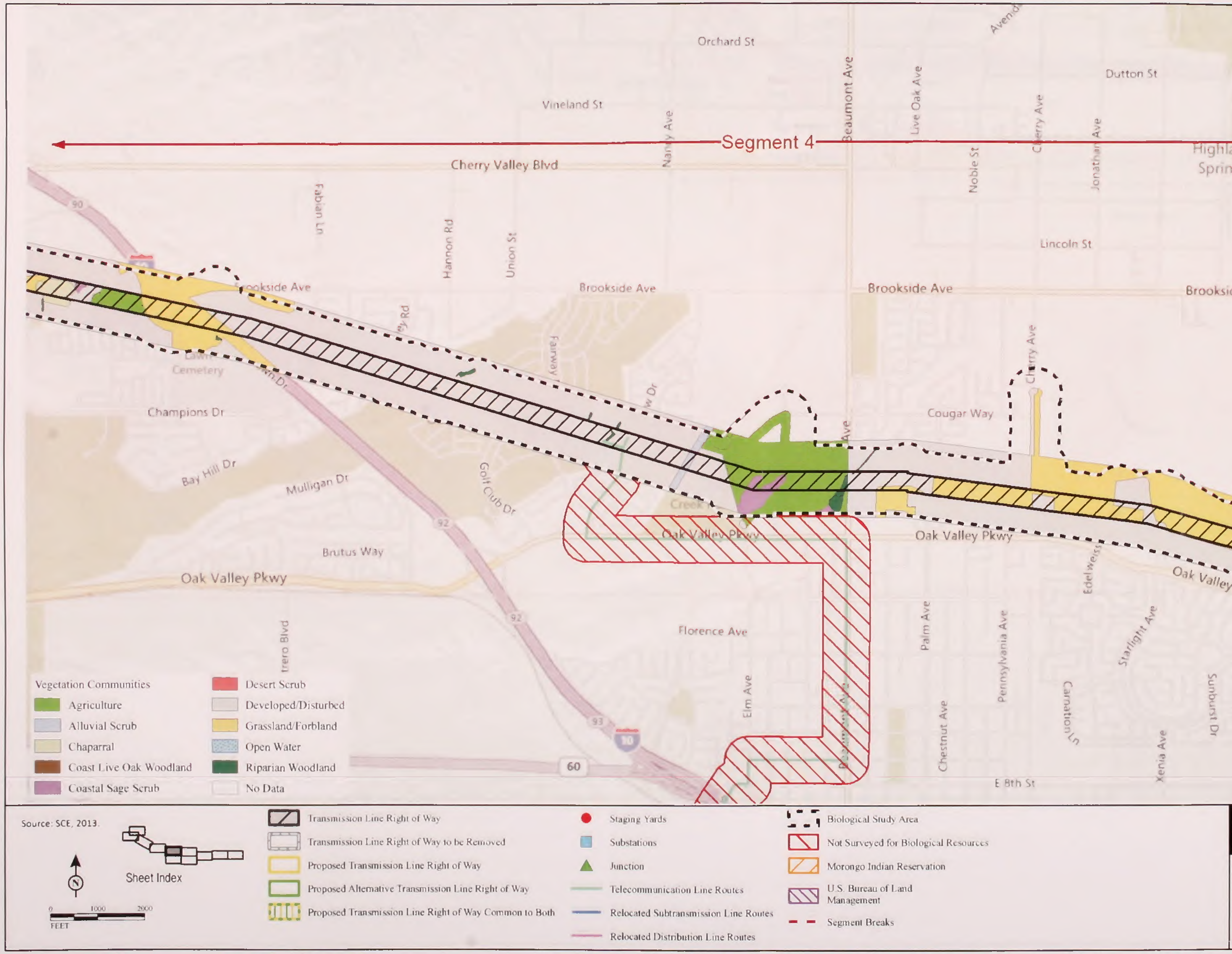


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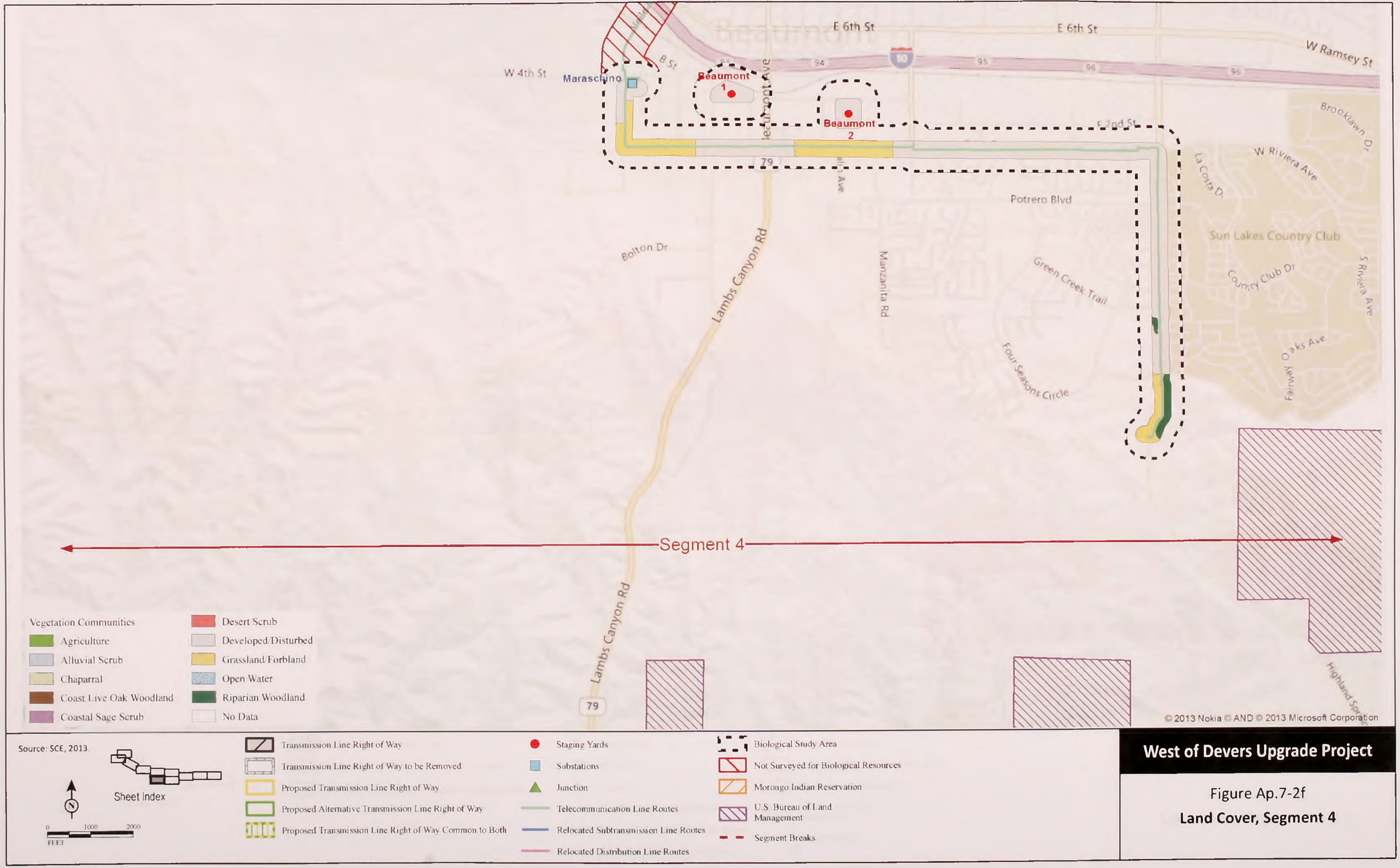
Figure Ap.7-2e

Land Cover, Segment 4



Source: SCE, 2013.

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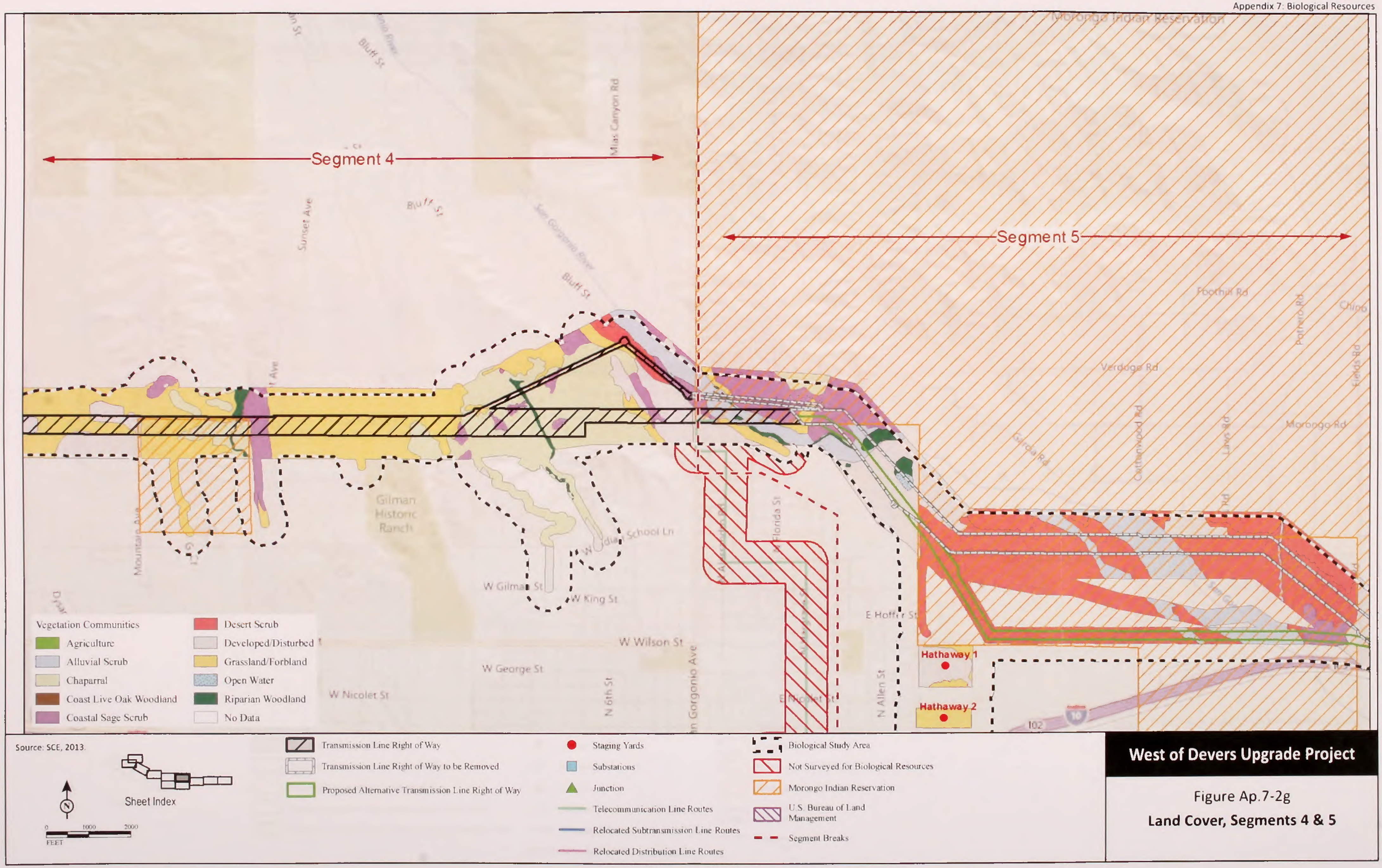
Figure Ap.7-2f

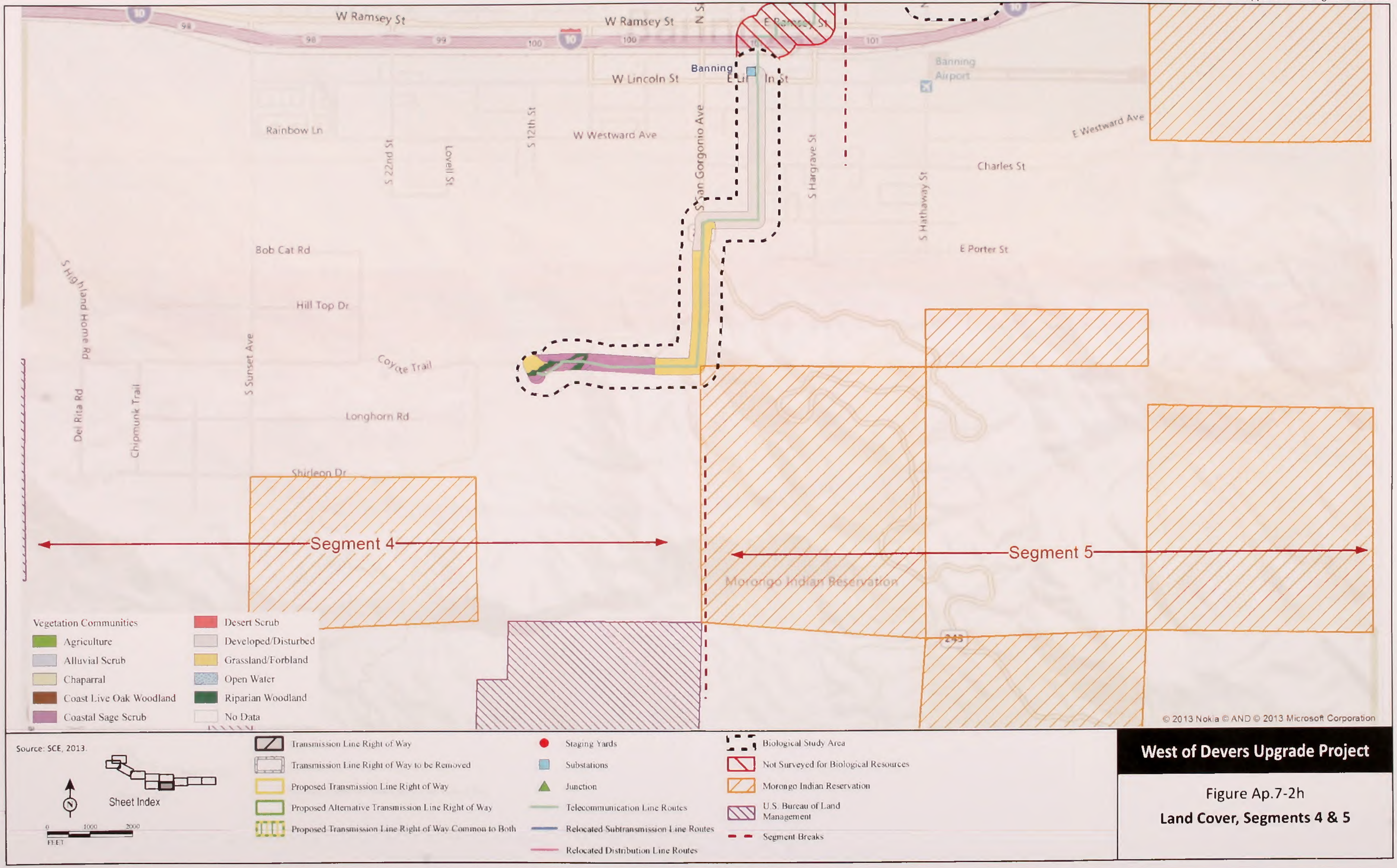
Land Cover, Segment 4



West of Devers Upgrade Project

Figure Ap.7-2g

Land Cover, Segments 4 & 5

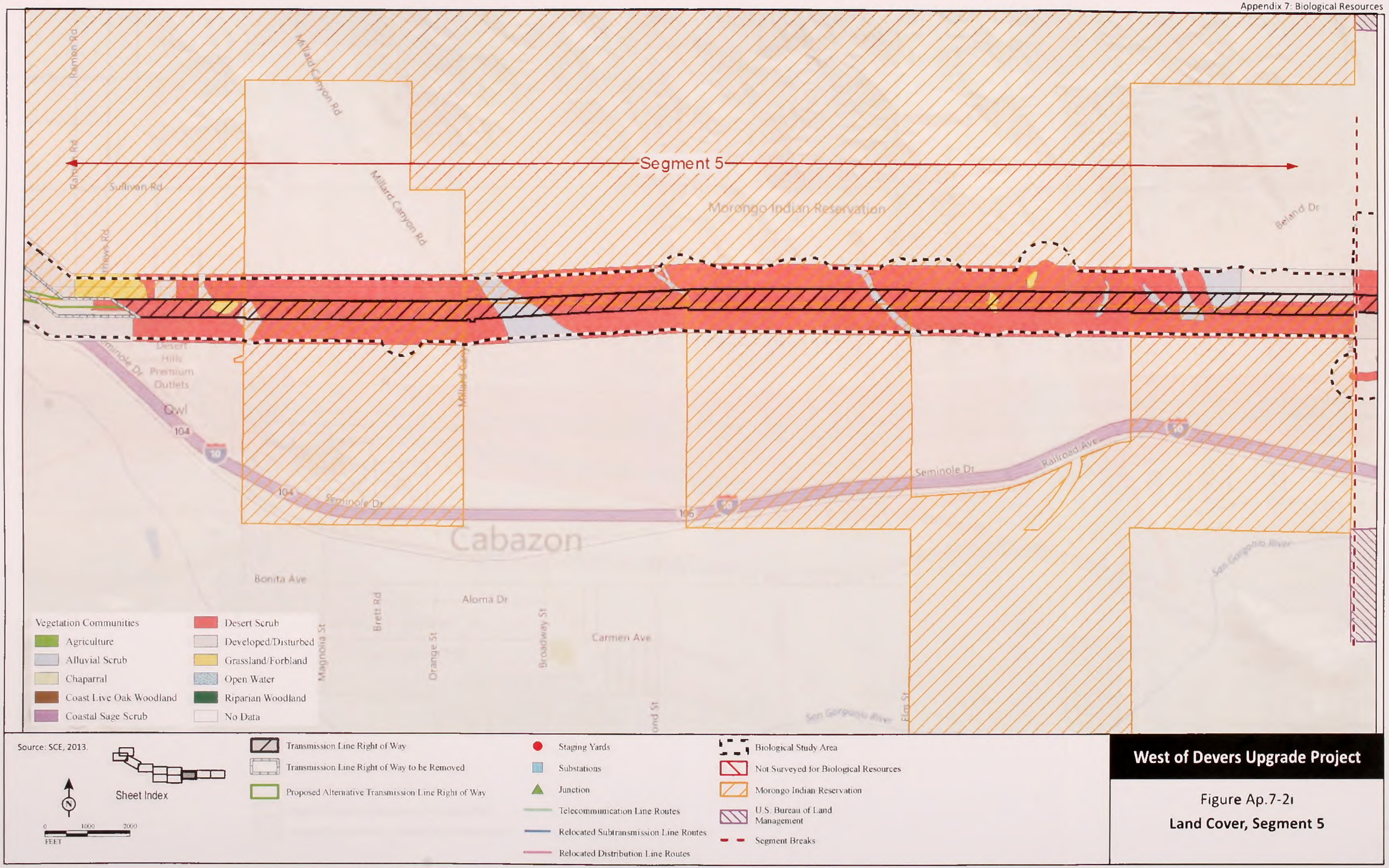


Source: SCE, 2013.

West of Devers Upgrade Project

Figure Ap.7-2h

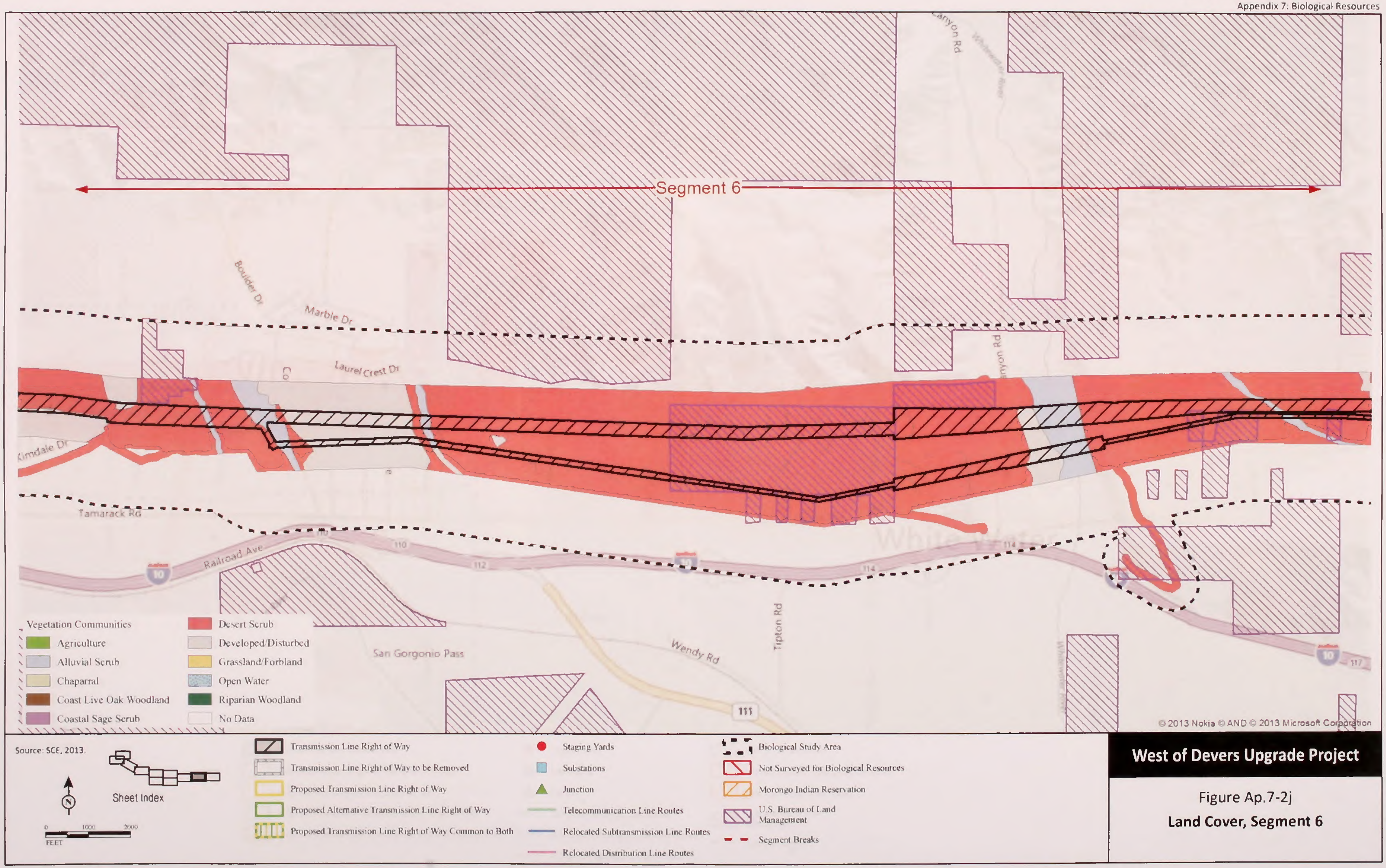
Land Cover, Segments 4 & 5



West of Devers Upgrade Project

Figure Ap.7-2i

Land Cover, Segment 5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Marble Dr
Laurel Crest Dr
Kimdale Dr
Tamarack Rd
Railroad Ave
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117
111
Wendy Rd
Tipton Rd
San Gorgonio Pass
White Water
Vegetation Communities
🟩 Agriculture
▨ Alluvial Scrub
▨ Chaparral
▨ Coast Live Oak Woodland
▨ Coastal Sage Scrub
🟥 Desert Scrub
▨ Developed/Disturbed
▨ Grassland/Forbland
▨ Open Water
🟩 Riparian Woodland
☐ No Data
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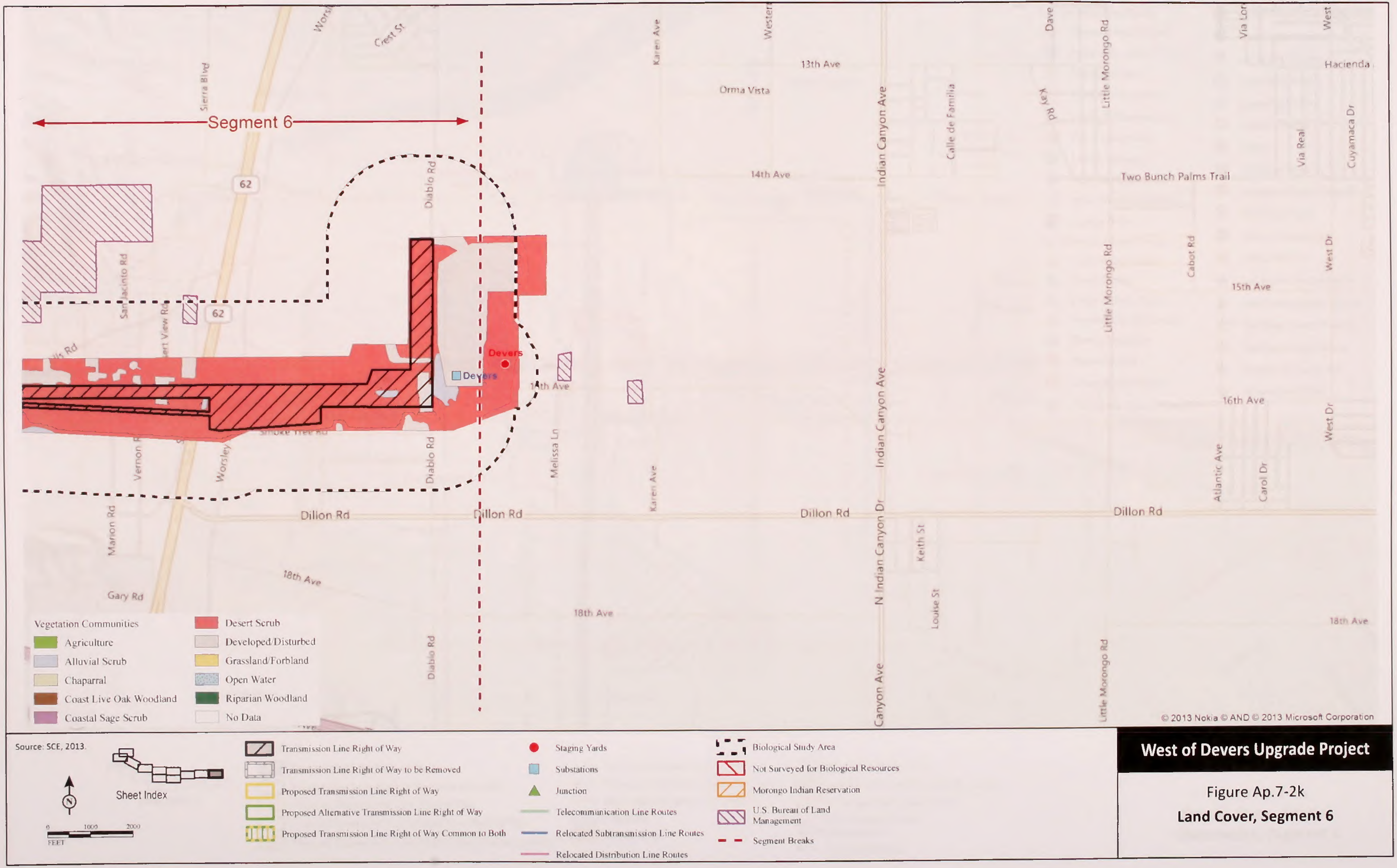
Figure Ap.7-2j

Land Cover, Segment 6



Source: SCE, 2013.

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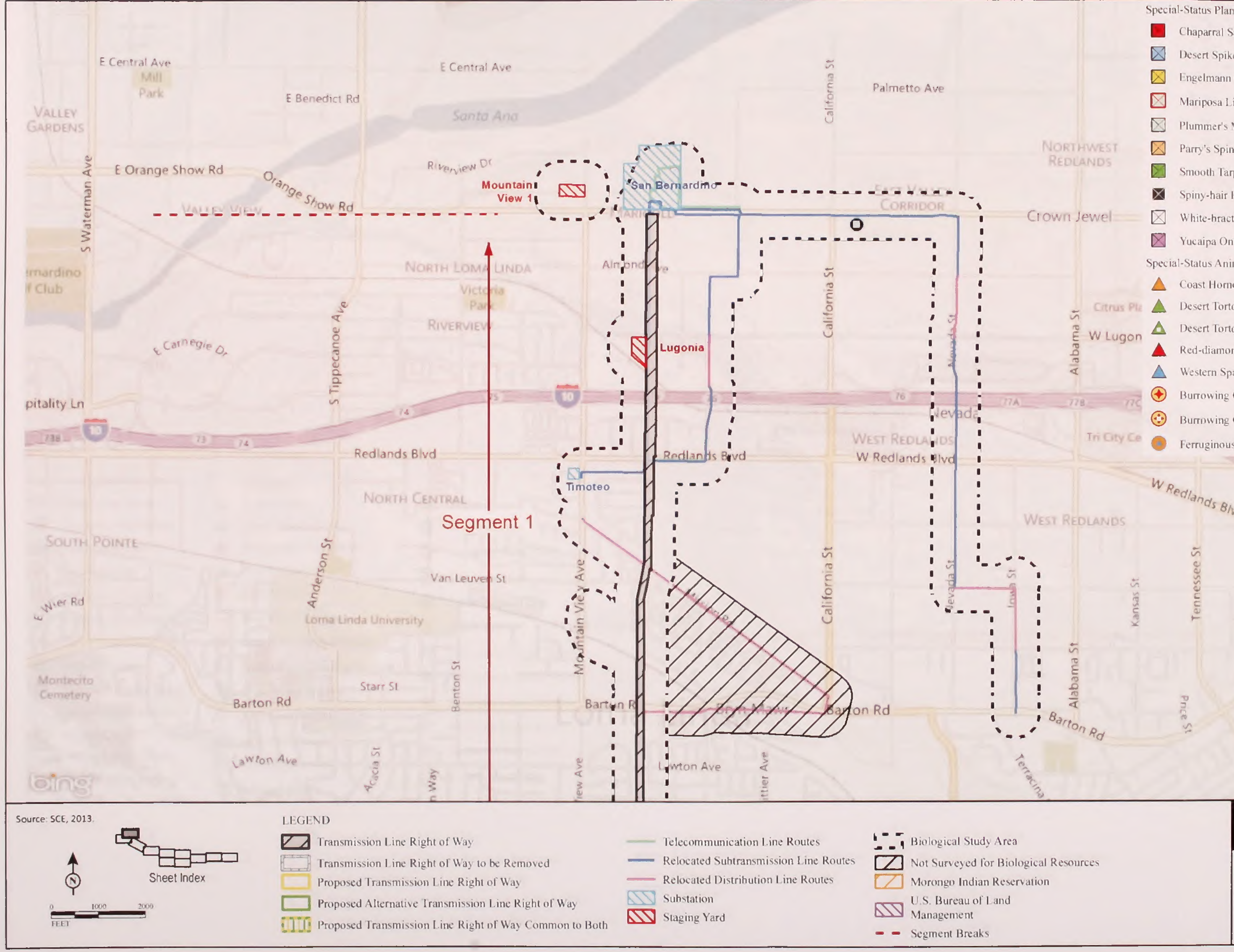
Figure Ap.7-2k

Land Cover, Segment 6



Source: SCE, 2013.

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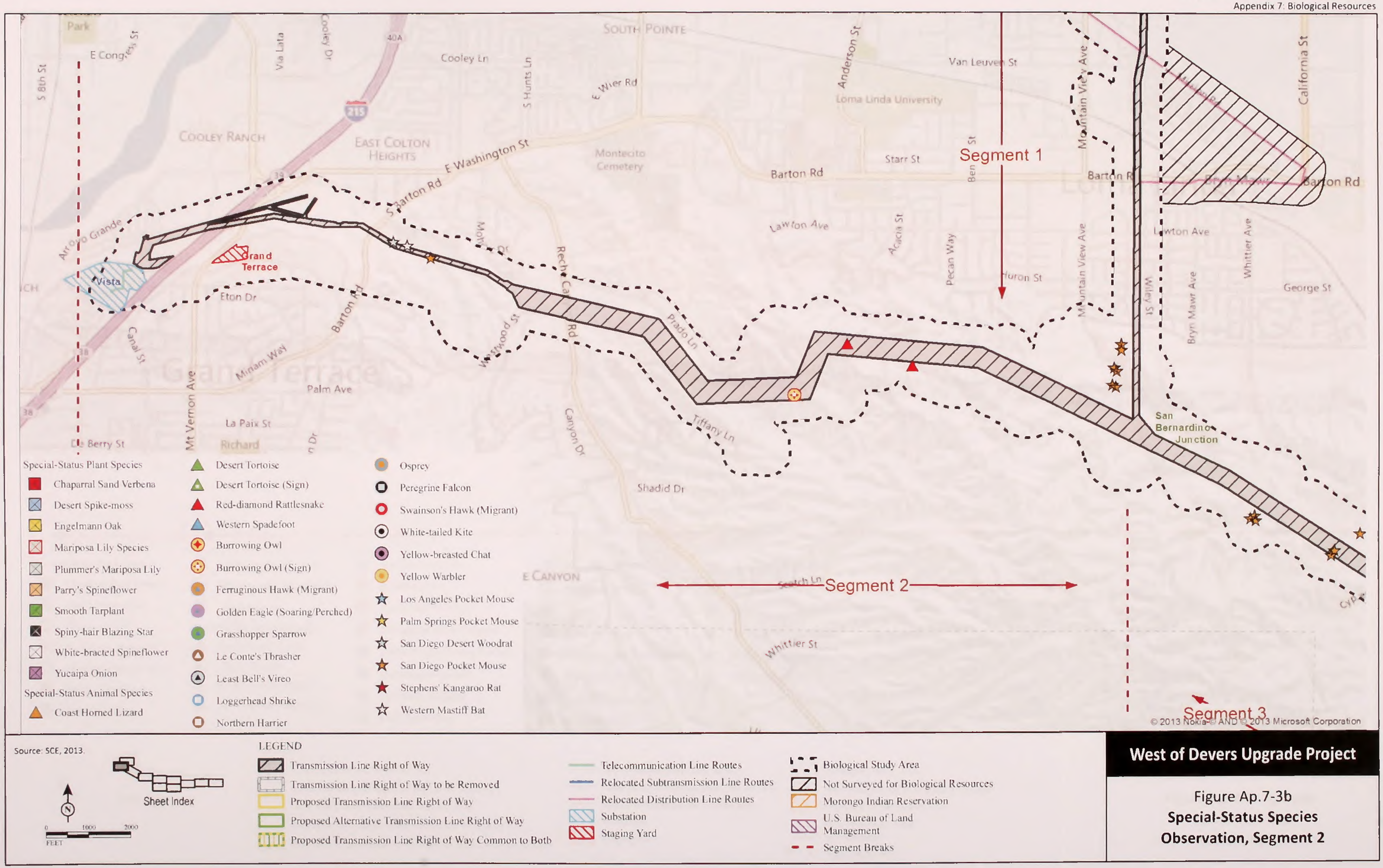
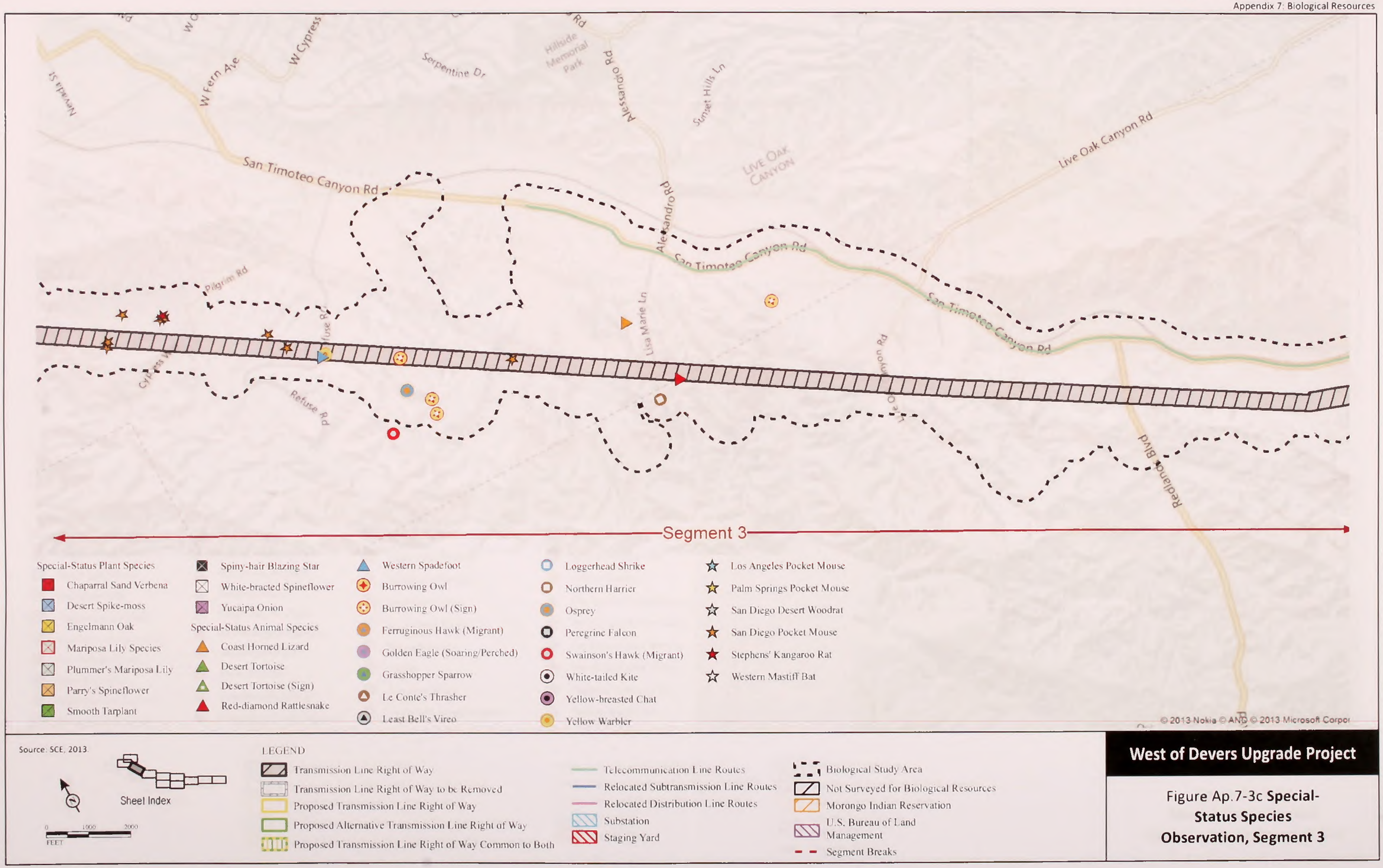
Figure Ap.7-3a
Special-Status Species Observation, Segment 1



West of Devers Upgrade Project

Figure Ap.7-3b
Special-Status Species Observation, Segment 2



Source: SCE, 2013.

West of Devers Upgrade Project

Figure Ap.7-3c **Special-Status Species Observation, Segment 3**

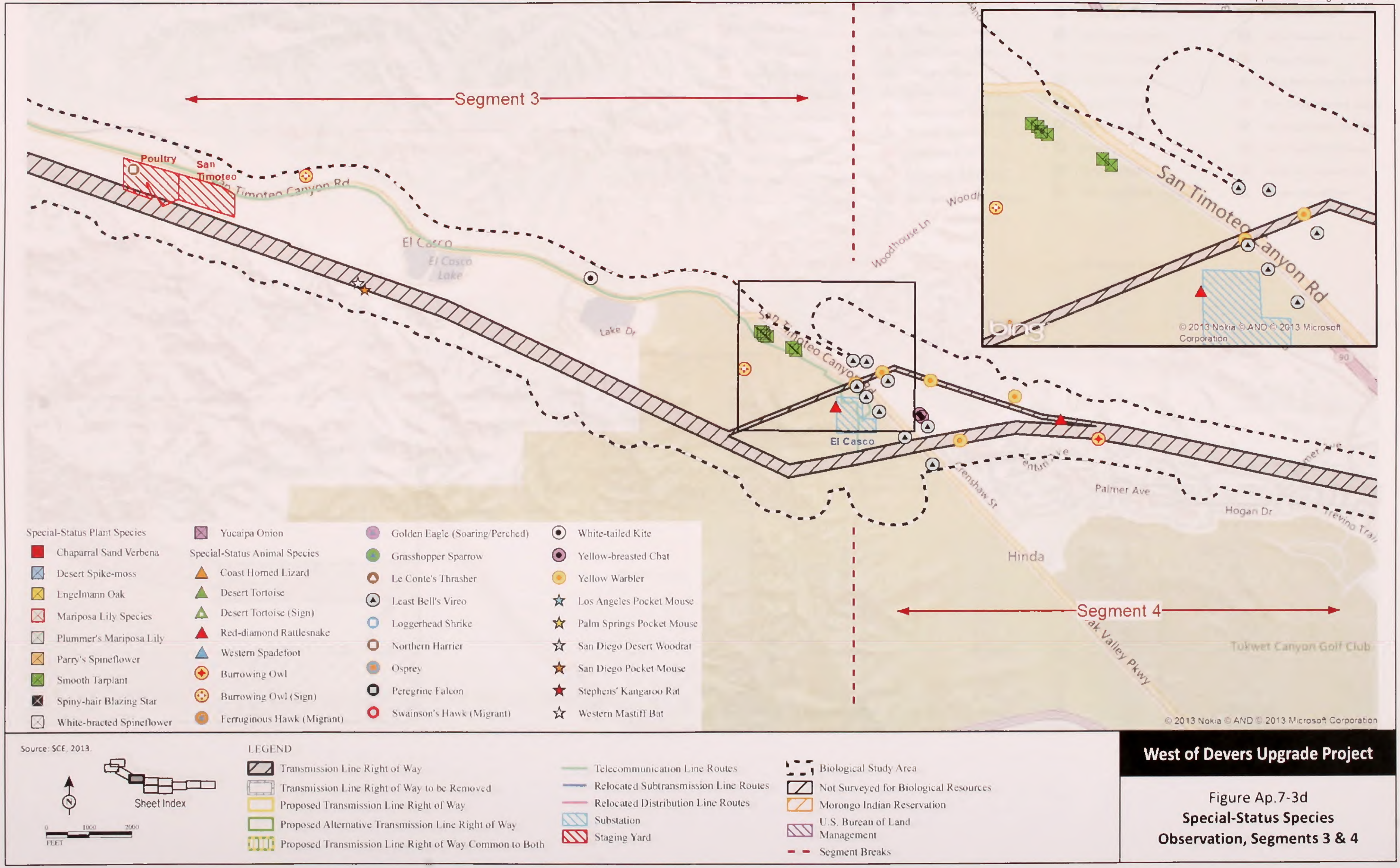


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Figure Ap.7-3d
Special-Status Species Observation, Segments 3 & 4

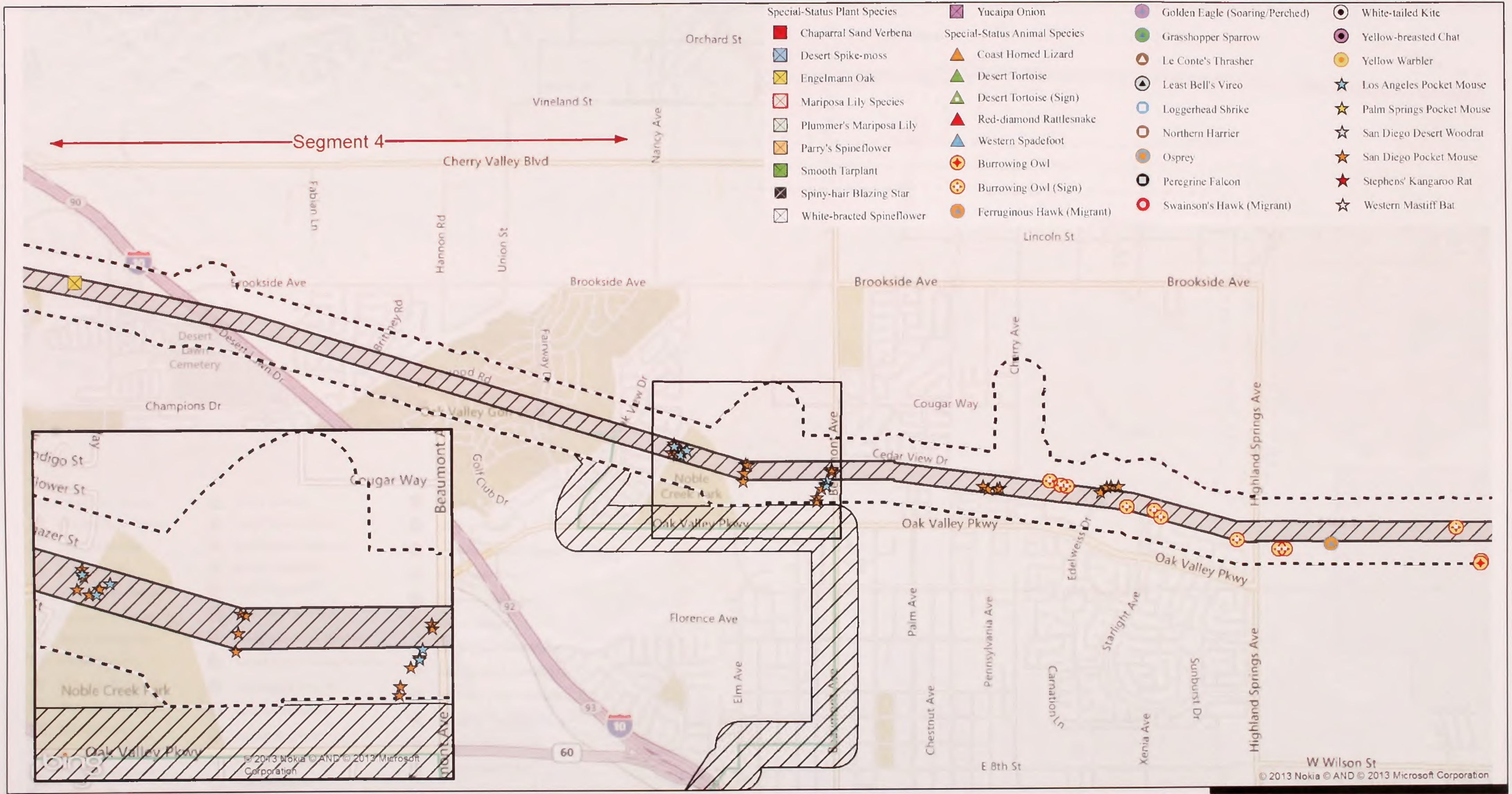

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Figure Ap.7-3e
Special-Status Species Observation, Segment 4

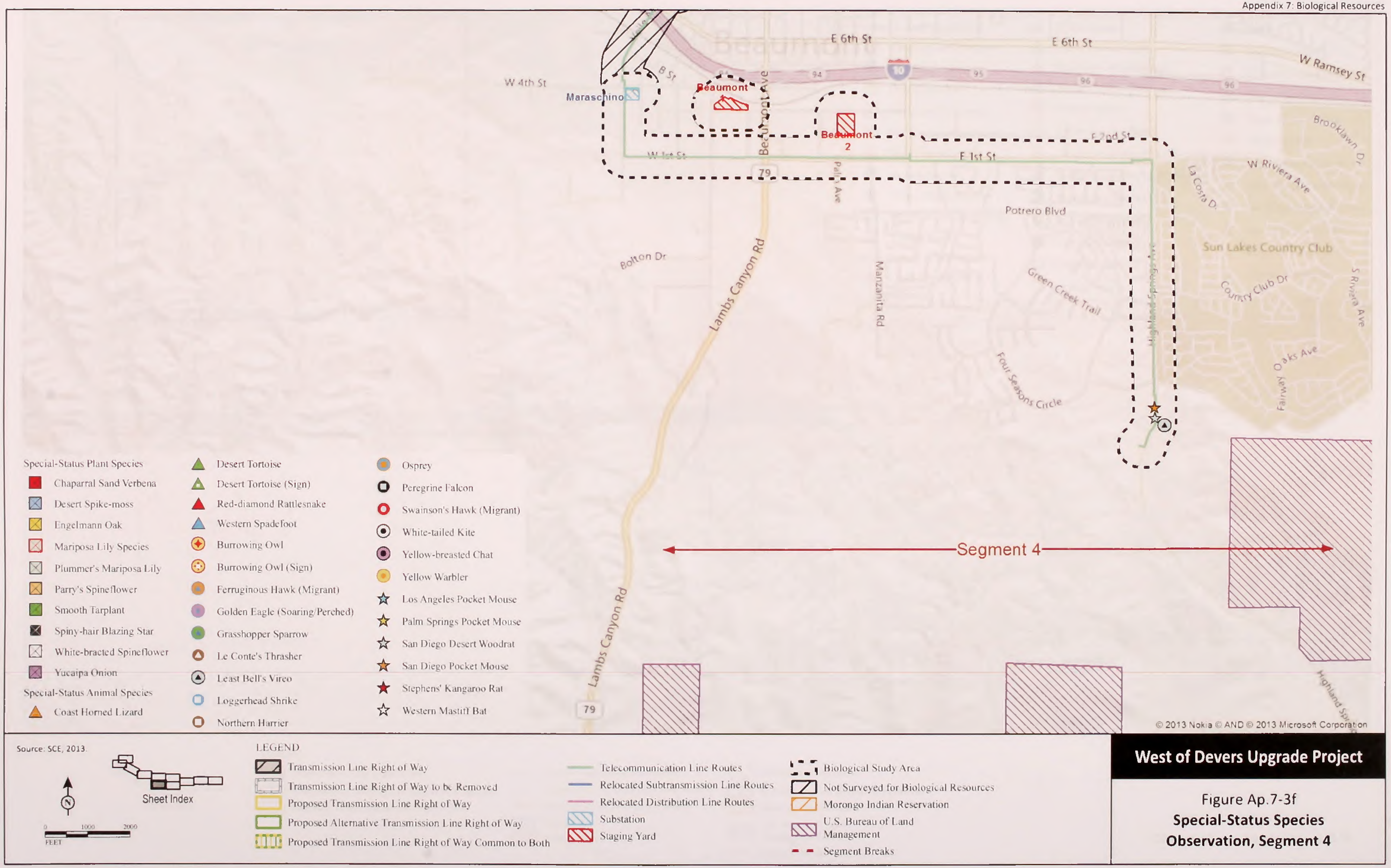

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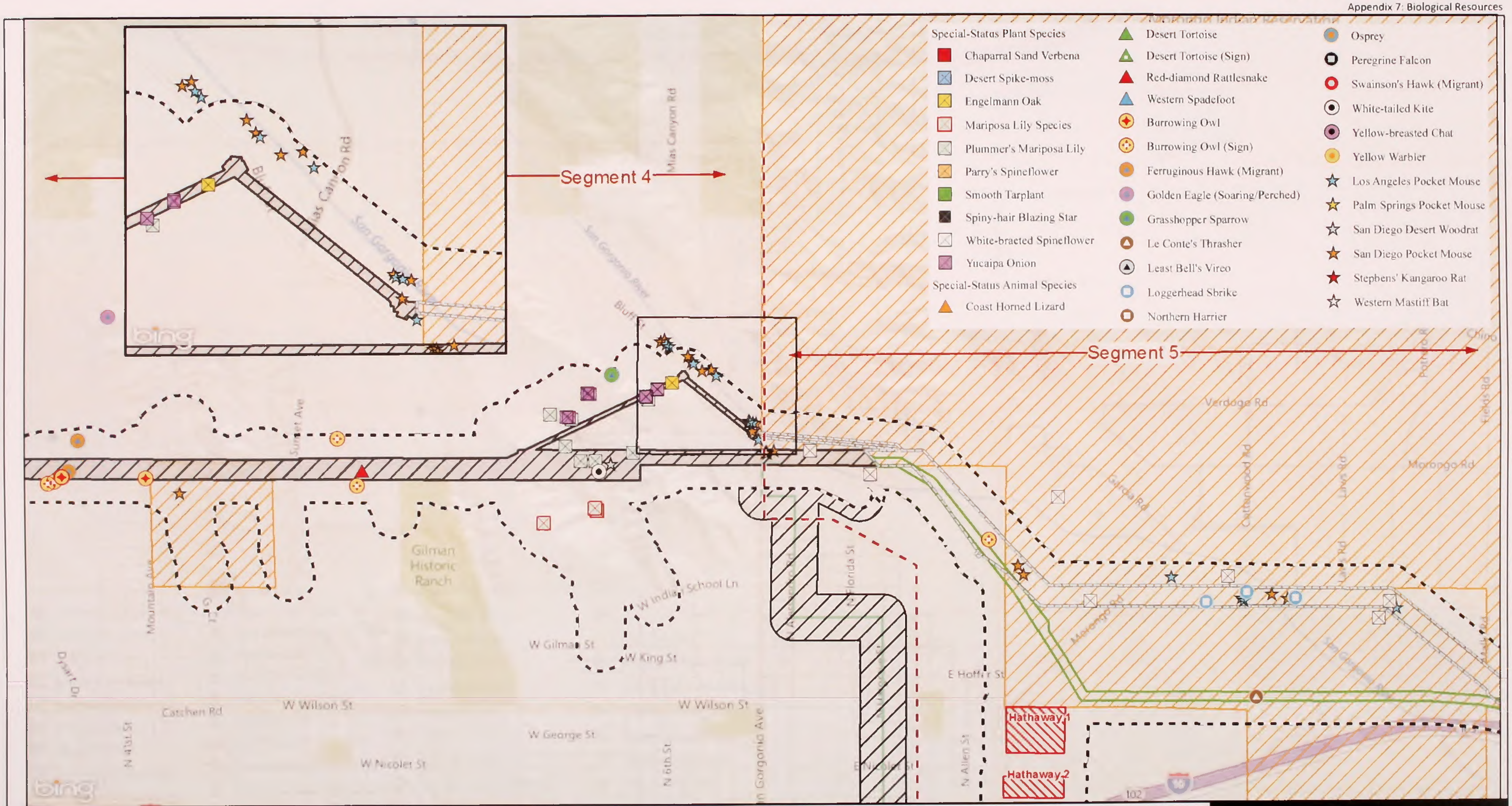
Figure Ap.7-3f
Special-Status Species Observation, Segment 4



West of Devers Upgrade Project

Figure Ap.7-3g
Special-Status Species Observation, Segments 4 & 5

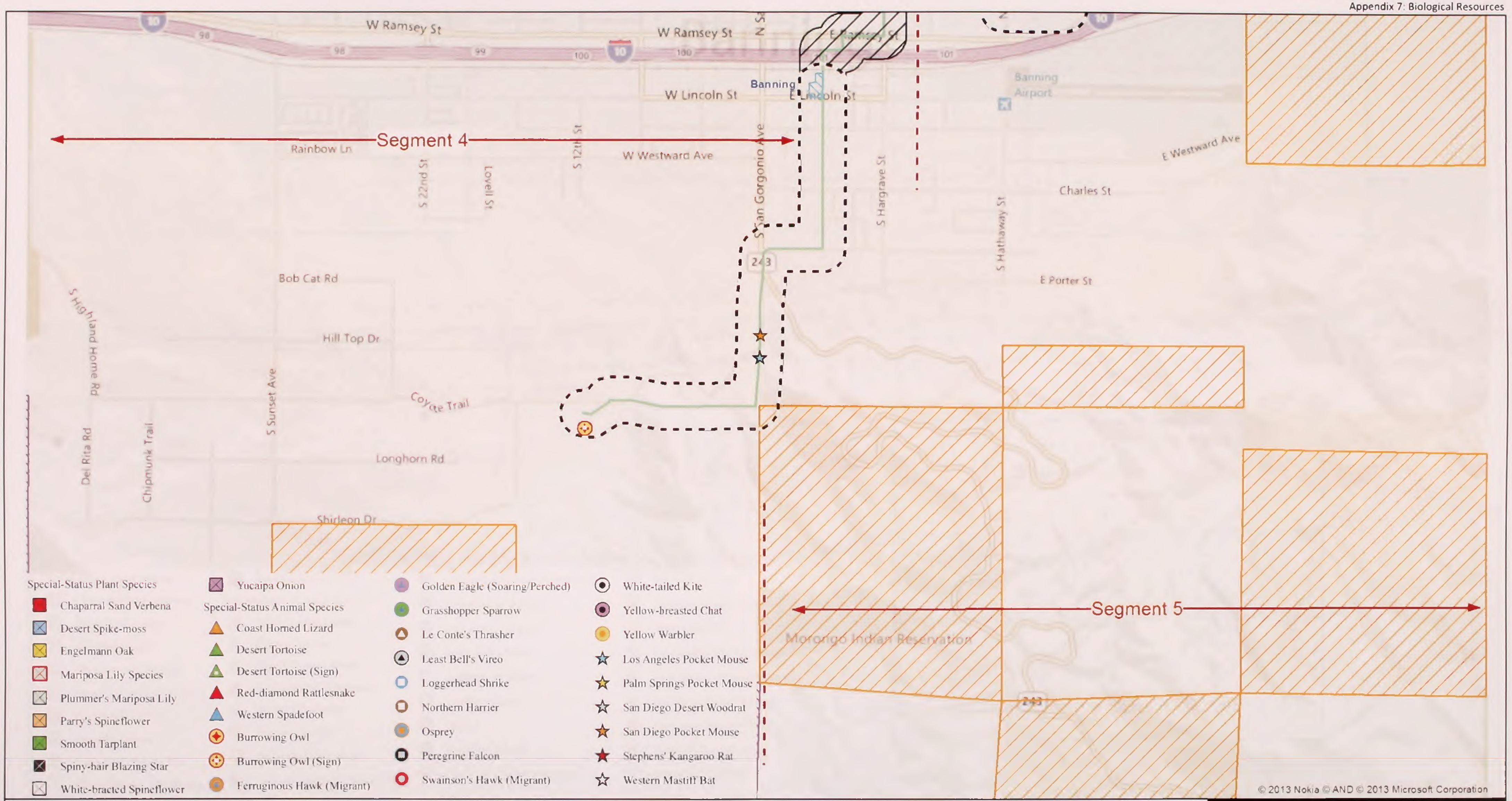


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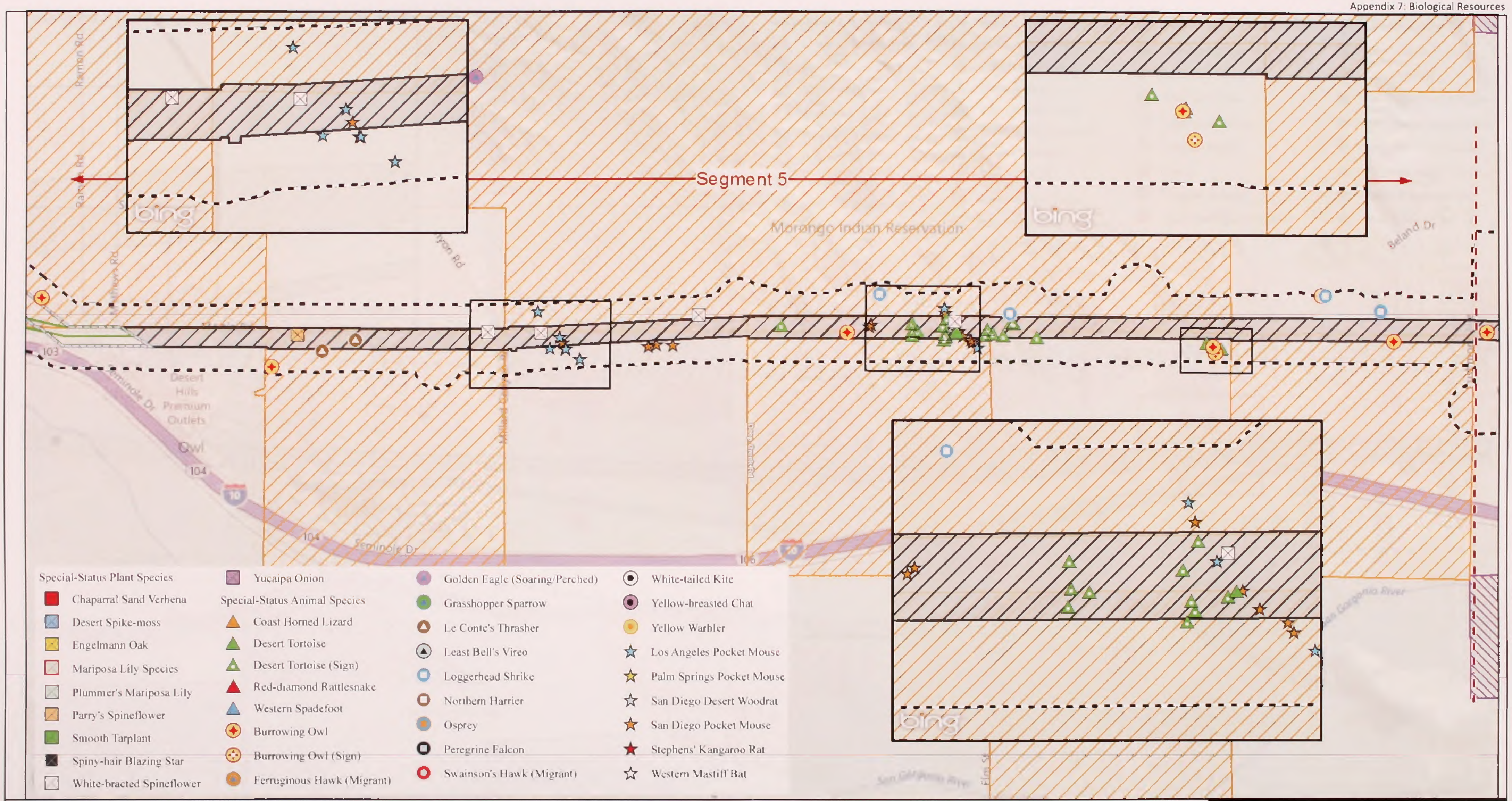
Figure Ap.7-3h

Special-Status Species Observation, Segments 4 & 5



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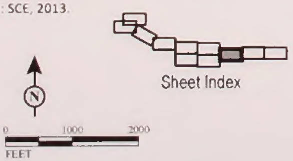

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- Relocated Subtransmission Line Routes
- Relocated Distribution Line Routes
- ▨ Substation
- ▨ Staging Yard
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- ▨ U.S. Bureau of Land Management
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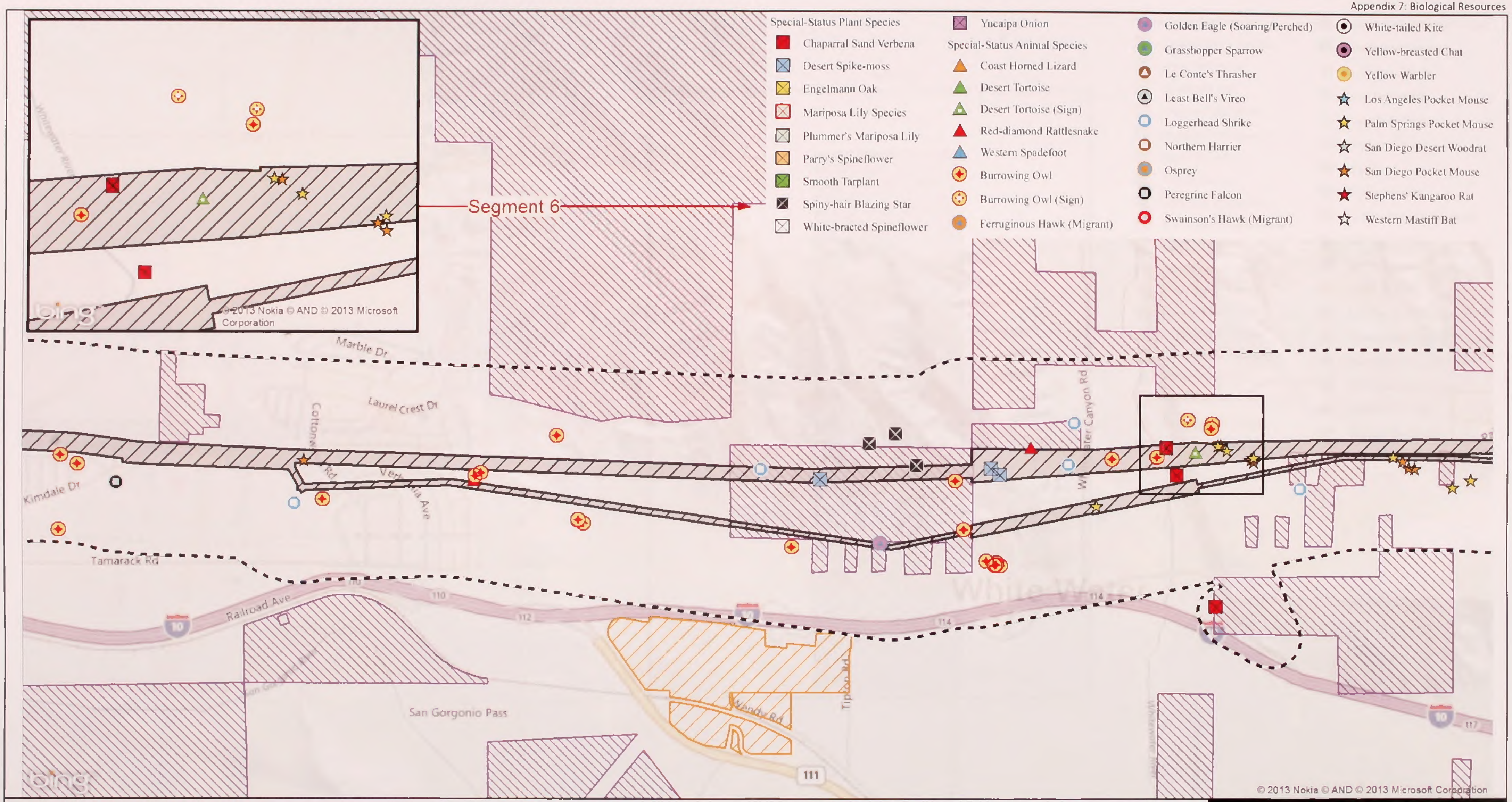
Figure Ap.7-3i

Special-Status Species Observation, Segment 5



Source: SCE, 2013.

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Figure Ap.7-3j
Special-Status Species Observation, Segment 6

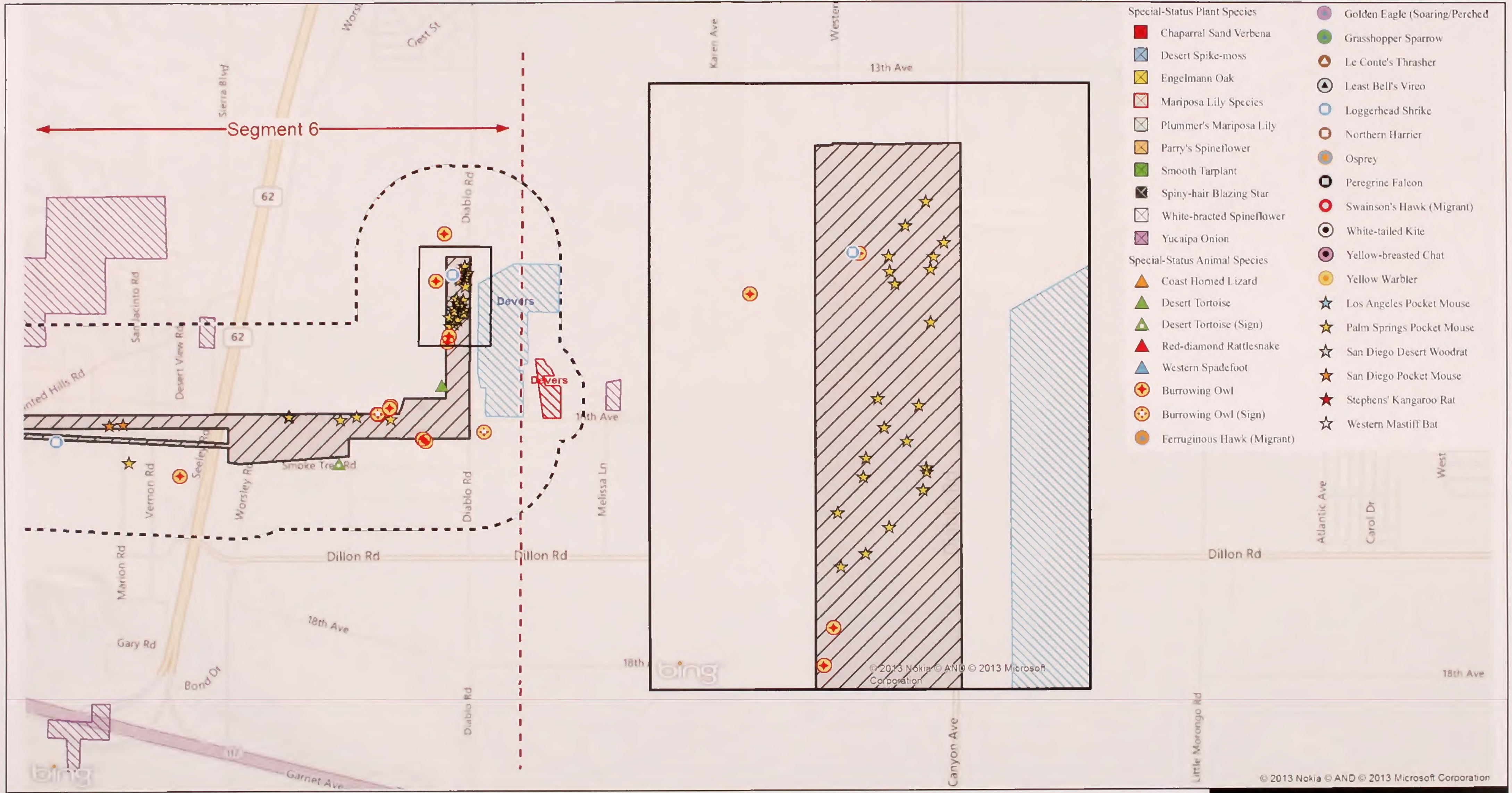

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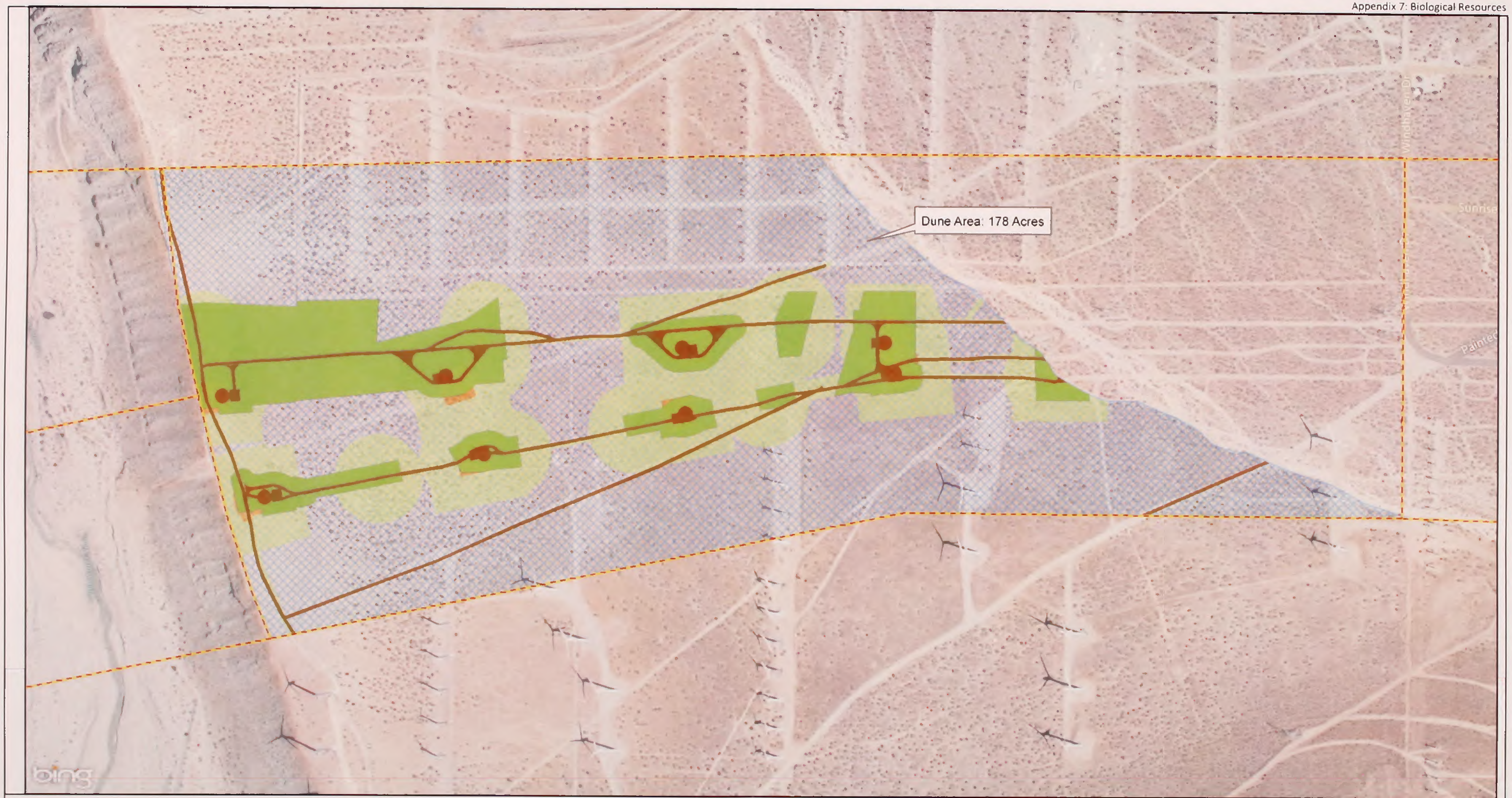
Figure Ap.7-3k
Special-Status Species Observation, Segment 6



SOURCE: GANDA, Bing, SCE Engineering data version: July 11, 2014

N

0 200 400
Feet

LEGEND

Refined Engineering Impact	PEA Engineering Impact
🟫 Permanent	🟧 Permanent
🟩 Temporary	▨ Temporary

▨ Dune Area (Creosote bush scrub)

▭ Botanical Survey Area

Creosote Bush Scrub/Dune Area Project Impacts (Acres*)			
	Temporary	Permanent	Total
Refined Engineering	22	8.4	31
PEA Engineering	49	5.1	54
Difference	-27	3.3	-23

* Discrepencies are due to rounding

West of Devers Upgrade Project

Figure Ap.7-4
Aeolian Sand Dune Area

Appendix 8.
Cultural Resources

Appendix 8

Cultural Resources

Appendix 8
Cultural Resources

Appendix 8 includes the following correspondences related to agency consultation and tribal communications for the West of Devers Upgrade Project.

Agency Consultation:

- BLM letter to SHPO initiating Section 106 Consultation
- SHPO response letter to BLM dated July 28, 2014
- BLM letter to ACHP dated August 22, 2014
- ACHP response letter to BLM dated September 5, 2014

Tribal Communication:

- SCE Tribal contact letters dated June 27, 2013
- BLM letter to Tribes dated May 20, 2014
- BLM follow-up letters to Tribes dated August 22, 2014

United States Department of the Interior
BUREAU OF LAND MANAGEMENT
Palm Springs-South Coast Field Office
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Visit us on the Internet at
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MAY 20 2014

In Reply Refer To:
CAD060/CAD000.06
2831-03/2850(P)
CACA - 0063162

CERTIFIED MAIL 7012 3460 0000 2912 1666
RETURN RECEIPT REQUESTED

Carol Roland-Nawi, Ph.D.
State Historic Preservation Officer
Office of Historic Preservation
1725 23rd Street, Suite 100
Sacramento, CA 95816

ATTN: Brendon Greenaway, Associate State Archaeologist

RE: West of Devers Transmission Line Upgrade Project, Riverside and San Bernardino Counties, California

Dear Dr. Roland-Nawi:

The Bureau of Land Management (BLM) is reviewing an application for a right-of-way (ROW) grant and proposed Plan of Development (POD) submitted by Southern California Edison (SCE) to upgrade, operate, and maintain approximately 1.1 miles of two 220 kV transmission lines on BLM administered lands, and remove some existing lines. The project is part of SCE's proposed upgrades to Segment 6 of the larger six segment West of Devers (WOD) Upgrade Project. Through WOD SCE proposes to upgrade 45 miles of two 220kV transmission lines between Palm Springs and San Bernardino, California (see Enclosure 1). The proposed project includes replacement of two existing single-circuit and one existing double-circuit 220 kV transmission lines and towers with two double-circuit 220 kV transmission lines and higher capacity equipment, relocation of two miles of 66 kV sub transmission lines and four miles of 12 kV distribution lines, upgrades to six existing substations, and installation of telecommunications equipment. The proposed Project crosses lands managed by the BLM, lands in private ownership, and the Morongo Band of Mission Indians Tribal Reservation. Most of the proposed Project is located within an existing SCE ROW corridor. The California Public Utilities Commission (CPUC) is the lead agency for the State and California Environmental Quality Act (CEQA) compliance.

The BLM is close to initiating the National Environmental Policy Act (NEPA) stages of this proposed Project. The purpose of this letter is to 1) notify the State Historic Preservation Officer (SHPO) about the proposed Project, 2) to initiate formal consultation on this undertaking with your office and follow the procedures at 36 CFR § 800, and 3) to submit the agency's Area of Potential Effect (APE) determination for consultation pursuant to 36 C.F.R. § 800.4(a)(1). The BLM further requests to expedite the consultation process for the proposed Project, pursuant to 36 CFR § 800.3(g), by combining our consultation on the identification efforts with our consultation on the determinations of eligibility and findings of effect. The BLM is in the process of identifying consulting parties and determining the scope of identification efforts for the Project. We would like to summarize activities which have been carried out to date for the purposes of analyzing the proposed undertaking.

The BLM has defined the APE for the agency's undertaking. The APE for direct effects includes the proposed and existing ROW corridor. The current ROW for the three existing 220kV transmission lines varies from 100 to 800 feet wide. The direct effects APE for the proposed 220kV transmission line corridor(s) includes the width of the existing ROW and any newly proposed ROW; a 50-foot-wide buffer on each side of the centerline of any existing road, 66kV sub transmission line, and distribution line that will be modified or newly developed for use by this proposed Project that otherwise extends beyond the 220kV transmission line corridor ROW; the land disturbance footprint for any staging area, materials yard, helicopter assembly yard; and the entire area of any substations modified for the proposed Project. The APE for indirect effects will be no more than ½-mile-wide on each side of the direct effects APE. Indirect effects to location, setting, feeling, and association of properties eligible for or listed on the National Register of Historic Places (NRHP) under Criterion A, B, or C, and unevaluated or unrecorded resources identified by Indian tribes will be considered. The BLM would like to consult with your office regarding this determination pursuant to 36 CFR § 800.4(a)(1).

Status of Environmental Review

SCE has developed a Proponents Environmental Assessment (PEA) as part of the CPUC CEQA review requirements. SCE conducted a number of studies to support their PEA including a literature review and records search ½ mile beyond the direct effects APE, and a Class III archaeological and built-environment inventory of the direct effects APE. The information gathered during the development of the PEA was incorporated into the POD that was submitted to the BLM.

An Environmental Impact Statement/Environmental Impact Report (EIS/EIR) will be prepared to evaluate the impacts of the proposed WOD Project. The CPUC is the State lead agency for the preparation of the EIR in compliance with the requirements of CEQA (Public Resources Code Section 21000 et. seq.), CEQA implementing guidelines (California Code of Regulations [CCR] Title 14, Section 15000 et. seq.). The BLM is the Federal lead agency for the preparation of the EIS in compliance with the requirements of NEPA, the Council on Environmental Quality (CEQ) regulation for implementing NEPA (40 Code of Federal Regulations [CFR] 1500 – 1508), and the BLM NEPA guidance handbook (H-1790-1). A joint EIS/EIR will be prepared to evaluate the proposed Project. The proposed Project will concurrently be analyzed for its potential to affect historic properties as required by section 106 of the National Historic Preservation Act (NHPA), and we will utilize the public review process described in the NEPA to partially meet our public involvement responsibilities under the NHPA. In addition, section 106 documentation for this proposed Project will be published on our website at http://www.blm.gov/ca/st/en/fo/cdd.html.

Status of Cultural Resources Studies

SCE has contracted with LSA to identify and evaluate all historic and archaeological resources within the APE. The CPUC has contracted with Aspen Environmental Group, and their subcontractors Applied Earthworks, to analyze the results of all cultural resources studies for presentation in the EIR/EIS. To date, LSA has conducted a literature review, records search, and BLM Class III archaeological and built environment survey of the direct effects APE. The BLM is currently reviewing the draft Class III report prepared by LSA to support SCE's PEA.

The literature review and records search conducted for the proposed Project included the APE plus a one-half-mile buffer. Record searches at the San Bernardino Archaeological Information Center, the Eastern Information Center, and the BLM have provided information about known resources on national, state, and local registries, as well as other previously recorded archaeological sites along the proposed Project corridor. Historic maps and General Land Office records at the Orbach Science Library Map Collection at the University of California, Riverside, and Riverside County Assessor's Office on-line records were also consulted. The records search indicated that 232 archaeological resource inventories have been conducted and 423 cultural resources have been recorded within ½ mile of the proposed Project area. Of the cultural resources documented in the records search and literature review, 70 resources were identified within the direct effects APE. These resources include 31 historic resources, 30 historic architectural resources, 7 prehistoric resources, 1 historic Native American Rancheria, and 1 historic Native American village site and cemetery. Two of these resources are California Historic Landmarks (#95 and #749), two are Registered State Historic Points of Interest (No. RIV-048 and RIV-049), and five have been previously recommended eligible for listing in the NRHP.

LSA conducted a Class III archaeological and built environment survey of the direct effects APE. Those surveys have resulted in the identification of 193 new cultural resources, including 190 historic resources, 3 prehistoric archaeological sites, and 50 isolated artifacts. Additional archival research is being done to support NRHP eligibility evaluations. The draft report is currently under review by the BLM. LSA is currently developing an evaluation plan for one archaeological site (CA-SBR-2311H/Guachama Rancheria) that is identified in the draft Class III report as requiring archaeological testing to evaluate.

LSA is also developing a contingency evaluation plan for the evaluation of any additional resources that may be impacted based on a planned final engineering design that is scheduled to be completed by June 2014. This plan will further refine the current POD to account for information gathered during the PEA studies and provide final locations for all proposed structures, equipment, and work areas. Once the final design has been released the BLM and CPUC will reassess the cultural resources studies and determine if any additional evaluation needs must be addressed. Any additional evaluation that may become necessary as a result of the final design completion will be conducted according to the contingency developed in the evaluation plan.

The BLM has also requested that SCE conduct an ethnographic literature review and indirect effects analysis for the proposed Project. Since the proposed Project is an upgrade to existing transmission lines and is located almost entirely within an existing ROW corridor, the BLM has defined the indirect effects APE as ½-mile beyond the direct effects APE. SCE's contractor will be analyzing indirect effects from the proposed project to the location, setting, feeling, and association of known NRHP eligible or listed properties within the indirect effects APE. This study will include known historic, archaeological, and tribal resources.

Status of Tribal Consultation

The BLM is concurrently notifying Indian tribes about this undertaking and requesting government-to-government consultation by letter. Fourteen federally recognized Indian tribes have been identified and are being invited to consult on the proposed Project, including the Agua Caliente Band of Cahuilla Indians, Augustine Band of Cahuilla Indians, Cabazon Band of Mission Indains, Cahuilla Band of Mission Indians, Morongo Band of Mission Indians, Pala Band of Mission Indians, Pauma/Yuima Band of Mission Indians, Pechanga Band of Mission Indians, Ramona Band of Mission Indians, Rincon Luiseno Band of Indians, San Manuel Band of Mission Indians, Soboba Band of Luiseno Indians, Torres-Martinez Desert Cahuilla Indians, and Twenty-nine Palms Band of Mission Indians.

As noted at the outset, the purpose of this letter is to notify your office of the proposed West of Devers Transmission Line Upgrade Project, initiate formal consultation on this undertaking with your office in accordance with the 36 CFR § 800 Regulations, to submit the agency's APE determination for consultation pursuant to 36 C.F.R. § 800.4(a)(1), and request to expedite the remainder of the consultation process for the proposed Project pursuant to 36 CFR § 800.3(g) by combining our consultation on the identification efforts with our consultation on the determinations of eligibility and findings of effect.

We appreciate your attention to our request and look forward to consulting on the proposed undertaking. If we can provide any information or address any questions regarding this undertaking, please do not hesitate to contact Tiffany Thomas, BLM Renewable Energy Archaeologist, at (951) 697-5365, or by e-mail at tathomas@blm.gov. You may also contact me at (760) 326-7000 or by e-mail at jkalish@blm.gov.

Sincerely,

John R. Kalish
Field Manager

Electronic CC:
Greg Miller (gmiller@blm.gov)
Brian Paul (rpaul@blm.gov)
Tiffany Thomas (tathomas@blm.gov)
George Kline (gkline@blm.gov)
Charlotte Hunter (cahunter@blm.gov)
Tony Overly (soverly@blm.gov)

Enclosures:
1 - Project Area Map

STATE OF CALIFORNIA – THE NATURAL RESOURCES AGENCY EDMUND G. BROWN, JR., *Governor*

OFFICE OF HISTORIC PRESERVATION
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calshpo@parks.ca.gov
www.ohp.parks.ca.gov

July 28, 2014

In Reply Refer To: BLM_2014_0523_001

John R. Kalish, Field Manager
United States Department of the Interior
Bureau of Land Management
Palm Springs-South Coast Field Office
1201 Bird Center Drive
Palm Springs, CA 92262-8001

Re: Initiating Section 106 Consultation for the West of Devers Transmission Line Upgrade Project

Dear Mr. Kalish:

Pursuant to 36 CFR Part 800 (as amended 8-05-04) regulations implementing Section 106 of the National Historic Preservation Act, the Bureau of Land Management (BLM), is initiating formal consultation, seeking my comments on its determination of the Area of Potential Effects (APE) and its planned historic property identification efforts for the West of Devers Transmission Line Upgrade Project. The BLM is also requesting to expedite the remainder of the consultation process pursuant to 36 CFR Part 800.3(g).

The BLM is reviewing an application for a right-of-way (ROW) grant and proposed Plan of Development (POD) submitted by Southern California Edison (SCE) to remove existing transmission lines and upgrade, operate, and maintain approximately 1.1 miles of two 220 kV transmission lines on BLM administered lands. The project is part of SCE's proposed upgrades to Segment 6 of the larger six segment West of Devers (WOD) Upgrade Project. The proposed project includes replacement of two existing single-circuit and one existing double-circuit 220 kV transmission lines and towers with two double-circuit 220 kV transmission lines and higher capacity equipment, relocation of two miles of 66 kV sub transmission lines and four miles of 12 kV distribution lines, upgrades to six existing substations, and installation of telecommunications equipment. The proposed Project crosses lands managed by the BLM, lands in private ownership, and the Morongo Band of Mission Indians Tribal Reservation. Most of the proposed Project is located within an existing SCE right-of- way (ROW) corridor.

The APE for direct effects includes the entire length of the proposed and existing ROW corridor (45 miles). The current ROW for the three existing 220kV transmission lines varies from 100 to 800 feet in width. The direct effects APE for the proposed 220kV transmission line corridor(s) includes the width of the existing ROW and any newly proposed ROW; a 50-foot-wide buffer on each side of the centerline of any existing road, 66kV sub transmission line, and distribution line that will be modified or newly developed for use by this proposed Project that otherwise extends beyond the 220kV transmission line corridor ROW; the land disturbance footprint for any staging area, materials yard, helicopter assembly yard; and the entire area of any substations modified for the proposed Project. The APE for indirect effects will be no more than ½-mile-wide on each side of the direct effects APE. Indirect effects to location, setting, feeling, and association of properties eligible for or listed on the National Register of Historic Places (NRHP) under

Criterion A, B, or C, and unevaluated or unrecorded resources identified by Indian tribes will be considered.

SCE has conducted a number of studies including a literature review and records search ½ mile beyond the direct effects APE in which 423 cultural resources were identified. A Class III archaeological and built-environment inventory of the direct effects APE was conducted by LSA on behalf of SCE; 193 new cultural resources were identified. The draft report is currently under review by BLM and archival research is being done to support NRHP eligibility determinations. An ethnographic literature review and indirect effects analysis has been requested by BLM. Fourteen federally recognized Indian Tribes have been identified and invited by letter to participate in government-to-government consultation.

Having reviewed your letter and supporting documentation, I have the following comments:

1) I agree that the BLM's delineation of the project's Area of Potential Effects is consistent with 36 CFR 800.16(d).

2) Pursuant to 36 CFR 800.3(g) I agree that expediting consultation is appropriate as long as consulting parties and the public have an adequate opportunity to express their views as provided in 36 CFR Part 800.2(d).

3) Pursuant to 36 CFR 800.4(a) and (b), I concur that the work plan constitutes a reasonable and good faith effort to identify historic properties within the APE.

Thank you for seeking my comments and for considering historic properties in planning your project. I look forward to continuing consultation on this project. If you require further information, please contact Brendon Greenaway of my staff at phone 916-445-7036 or email brendon.greenaway@parks.ca.gov.

Sincerely,

Carol Roland Nawi, Ph.D.

Carol Roland-Nawi, PhD
State Historic Preservation Officer

United States Department of the Interior
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In Reply Refer To:
CACA-063162
2831-03 (P)
CAD000.06/CAD060

AUG 2 2 2014

Mr. Reid Nelson, Director
Office of Federal Agency Programs
Advisory Council on Historic Preservation
Attention: Nancy Brown
Liaison to the Bureau of Land Management
1100 Pennsylvania Avenue NW, Room 803
Washington DC 20004-2501

RE: West of Devers Transmission Line Upgrade Project, Riverside and San Bernardino Counties, California

Dear Mr. Nelson:

The Bureau of Land Management (BLM) is reviewing an application for a right-of-way (ROW) grant and proposed Plan of Development (POD) submitted by Southern California Edison (SCE) to upgrade, operate, and maintain two 220-kV transmission lines on approximately 1.1 miles of BLM-administered lands, and remove some existing lines. The project is part of SCE's proposed upgrades to Segment 6 of the larger six-segment West of Devers (WOD) Upgrade Project. For the entire project, SCE proposes to upgrade 45 miles of two 220-kV transmission lines between Palm Springs and San Bernardino, in Riverside and San Bernardino Counties, California (see Enclosure 1). The proposed project includes replacement of two existing single-circuit and one existing double-circuit 220-kV transmission lines and towers, with two double-circuit 220-kV transmission lines and higher capacity equipment; relocation of two miles of 66-kV sub transmission lines and four miles of 12-kV distribution lines; upgrades to six existing substations; and installation of telecommunications equipment. The proposed Project crosses lands managed by the BLM, lands in private ownership, and the Morongo Band of Mission Indians Tribal Reservation. Most of the proposed Project is located within an existing SCE ROW corridor. The California Public Utilities Commission (CPUC) is the lead agency for the State and California Environmental Quality Act (CEQA) compliance.

Pursuant to guidance from the BLM Washington Office and the Advisory Council on Historic Preservation (ACHP) and Information Bulletin 2013-020, the Secretary of the Interior's priority renewable energy projects and other major infrastructure projects have the potential to be controversial and complex undertakings and should be processed according the 36 CFR § 800 Regulations. The BLM would like to invite the participation of the ACHP in the Section 106 compliance process for this undertaking in accordance with 36 CFR 800.2(b)(1).

The undertaking and the area of potential effect (APE) for Section 106 has been defined, and the BLM is currently consulting with the California State Historic Preservation Office (SHPO) on the APE (May 7, 2014). The current ROW for the three existing 220-kV transmission lines varies from 100 to 800 feet wide. The direct effects APE for the proposed 220-kV transmission line corridor(s) includes the width of the existing ROW and any newly proposed ROW; a 50-foot-wide buffer on each side of the centerline of any existing road, 66-kV sub transmission line, and distribution line that will be modified or newly developed for use by this proposed Project that otherwise extends beyond the 220-kV transmission line corridor ROW; the land disturbance footprint for any staging area, materials yard, helicopter assembly yard; and the entire area of any substations modified for the proposed Project. The APE for indirect effects will be no more than one-half-mile wide on each side of the direct effects APE. Indirect effects to location, setting, feeling, and association of properties eligible for or listed on the National Register of Historic Places (NRHP) under Criterion A, B, or C, and unevaluated or unrecorded resources identified by Indian tribes will be considered.

Status of Environmental Review
SCE has developed a Proponents Environmental Assessment (PEA) as part of the CPUC CEQA review requirements. SCE conducted a number of studies to support their PEA including a literature review and records search ½ mile beyond the direct effects APE, and a Class III archaeological and built-environment inventory of the direct effects APE. The information gathered during the development of the PEA was incorporated into the POD that was submitted to the BLM.

Under Federal law, the BLM is responsible for processing ROW applications for facilities proposed to be constructed and operated on public lands. An Environmental Impact Statement/Environmental Impact Report (EIS/EIR) will be prepared to evaluate the impacts of the proposed WOD Project. The CPUC is the State lead agency for the preparation of the EIR in compliance with the requirements of CEQA (Public Resources Code Section 21000 et. seq.), CEQA implementing guidelines (California Code of Regulations [CCR] Title 14, Section 15000 et. seq.). The BLM is the Federal lead agency for the preparation of the EIS in compliance with the requirements of NEPA, the Council on Environmental Quality (CEQ) regulation for implementing NEPA (40 Code of Federal Regulations [CFR] 1500 – 1508), and the BLM NEPA guidance handbook (H-1790-1). A joint EIS/EIR will be prepared to evaluate the proposed Project. The proposed Project will be analyzed concurrently for its potential to affect historic properties as required by section 106 of the National Historic Preservation Act (NHPA), and we will utilize the public review process described in the NEPA to partially meet our public involvement responsibilities under the NHPA. In addition, section 106 documentation for this proposed Project will be published on our website at http://www.blm.gov/ca/st/en/fo/cdd.html.

Status of Cultural Resources Studies
SCE has contracted with LSA and ASM Affiliates to identify and evaluate all historic and archaeological resources within the APE. The CPUC has contracted with Aspen Environmental Group, and their subcontractors Applied Earthworks, to analyze the results of all cultural resources studies for presentation in the EIR/EIS. To date, LSA has conducted a literature review, records search, and BLM Class III archaeological and built environment survey of the direct effects APE to support SCE's PEA. The results of these studies are documented in the

final report entitled *Cultural Resources Assessment and Class III Inventory, West of Devers Project, Riverside and San Bernardino Counties, California* (enclosure 2).

Literature reviews and records searches for the direct effects APE plus a one-half-mile buffer were conducted at the San Bernardino Archaeological Information Center, the Eastern Information Center, and the BLM. Information was gathered regarding known resources on national, state, and local registries, as well as other previously recorded archaeological sites along the proposed Project corridor. Historic maps and General Land Office records at the Orbach Science Library Map Collection at the University of California, Riverside, and Riverside County Assessor's Office on-line records were also consulted. The records search indicated that 232 archaeological resource inventories have been conducted and 423 cultural resources have been recorded within one-half mile of the proposed Project area. Of the cultural resources documented in the records search and literature review, 70 resources were identified within the direct effects APE. These resources include 31 historic resources, 30 historic architectural resources, 7 prehistoric resources, 1 historic Native American Rancheria, and 1 historic Native American village site and cemetery. Two of these resources are California Historic Landmarks (#95 and #749), two are Registered State Historic Points of Interest (No. RIV-048 and RIV-049), and five have been previously recommended eligible for listing in the NRHP. The archaeological and built environment surveys resulted in the identification of 193 new cultural resources, including 190 historic resources, 3 prehistoric archaeological sites, and 50 isolated artifacts.

Based on the results of the Class III surveys, the BLM and CPUC have determined that additional information is required to evaluate seven archaeological resources for their eligibility for listing in the National Register of Historic Places (NRHP) and the California Register of Historic Resources (CRHR). Six archaeological sites (CA-RIV-11411, CA-RIV-11417, CA-RIV-11419, CA-RIV-11426, CA-SBR-11624H, and P-36-24295) require additional archival research in order to be evaluated under Criteria A/1 and B/2 for their association with significant events or persons in history. One archaeological site (CA-SBR-2311H) will require archaeological testing in order to be evaluated under Criterion D/4 for its information potential. A testing plan has been developed to guide the additional research efforts (enclosure 2). The archival research is currently underway and the fieldwork is currently being coordinated with the private land-owner.

As part of the testing plan, LSA has also developed a contingency evaluation plan for the evaluation of any additional resources that may be impacted as a result of any final engineering designs. The final engineering design will be used to refine the current POD to account for information gathered during the PEA studies and provides final locations for all proposed structures, equipment, and work areas. Once the final design has been released, the BLM and CPUC will reassess the cultural resources studies and determine if any additional evaluation needs must be addressed. Any additional evaluation that may become necessary as a result of the final design completion will be conducted according to the contingency developed in the evaluation plan.

Since the proposed Project is an upgrade to existing transmission lines and is located almost entirely within an existing ROW corridor, the BLM has defined the indirect effects APE as one-half-mile beyond the direct effects APE. ASM Affiliates is currently conducting additional archival research to support NRHP eligibility evaluations for historic buildings and analyzing indirect effects from the proposed project to the location, setting, feeling, and association of known NRHP eligible or listed properties within the indirect effects APE. The archival research report will include known historic, archaeological, and tribal resources.

Status of Tribal Consultation

The BLM has notified Indian tribes about this undertaking and requested government-to-government consultation by letter on May 7, 2014. Fourteen federally recognized Indian tribes have been identified and invited to consult on the proposed Project, including the Agua Caliente Band of Cahuilla Indians, Augustine Band of Cahuilla Indians, Cabazon Band of Mission Indains, Cahuilla Band of Mission Indians, Morongo Band of Mission Indians, Pala Band of Mission Indians, Pauma/Yuima Band of Mission Indians, Pechanga Band of Mission Indians, Ramona Band of Mission Indians, Rincon Luiseno Band of Indians, San Manuel Band of Mission Indians, Soboba Band of Luiseno Indians, Torres-Martinez Desert Cahuilla Indians, and Twenty-nine Palms Band of Mission Indians.

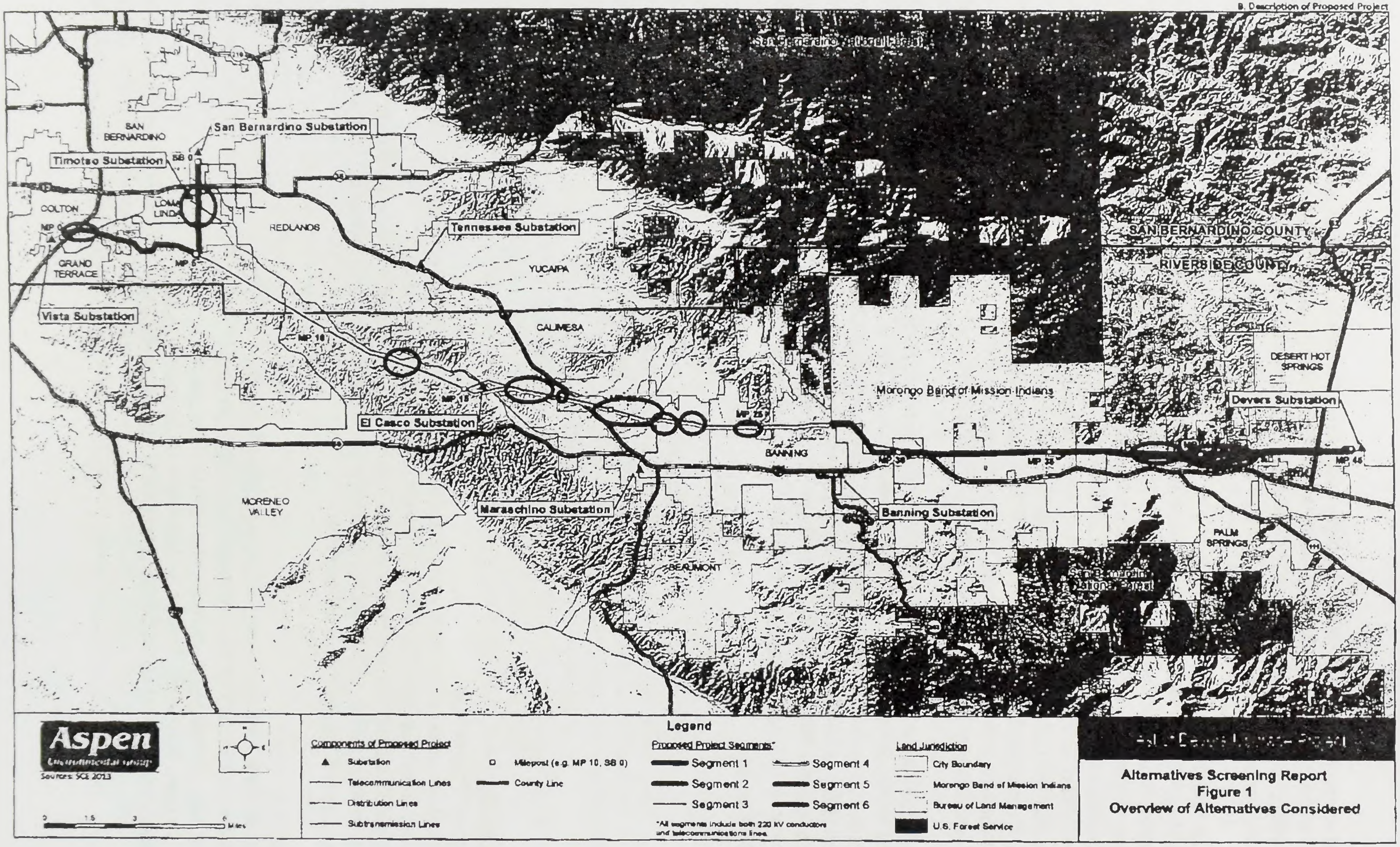
As noted at the outset, the purpose of this letter is to provide notification to the ACHP of the proposed West of Devers Upgrade Project and invite the ACHP to participate with the BLM in the Section 106 review of the undertaking. We appreciate your attention to our request. If we can provide any information or address any questions regarding this undertaking, please do not hesitate to contact Tiffany Thomas, BLM Renewable Energy Archaeologist, at (951) 697-5365, or by e-mail at tathomas@blm.gov. You may also contact me at (760) 326-7100 or by e-mail at twakefie@blm.gov.

Sincerely,

Timothy J. Wakefield
Acting Field Manager

Enclosures (3):
1 – Proposed Project Map
2 - *Cultural Resources Assessment and Class III Inventory, West of Devers Project, Riverside and San Bernardino Counties, California* prepared by LSA (see CD)
3 – *Cultural Resources Evaluation Report and Testing Plan for Southern California Edison Company's West of Devers Upgrade Project, Riverside and San Bernardino Counties, California* prepared by LSA (see CD)

Electronic CC:
Frank McMenimen, Project Manager (fmcmenimen@blm.gov)
Greg Miller, Supervisory Projects Manager (gmiller@blm.gov)
George Kline, Archaeologist, Palm Springs (gkline@blm.gov)
Tiffany Thomas, Renewable Energy Archaeologist (tathomas@blm.gov)
Tony Overly, Archaeologist, California State Office (soverly@blm.gov)



Alternatives Screening Report
Figure 1
Overview of Alternatives Considered

Preserving America's Heritage

September 5, 2014

Timothy J. Wakefield
Acting Field Manager
Palm Springs-South Coast Field Office
1201 Bird Center Drive
Palm Springs, CA 92262-8001

Ref: ***Proposed West of Devers Transmission Line Upgrade Project***
Riverside and San Bernardino Counties, California

Dear Mr. Wakefield:

On August 26, 2014 the Advisory Council on Historic Preservation (ACHP) received your notification and supporting documentation regarding the referenced undertaking. We understand that the Bureau of Land Management (BLM) has not made a finding of effect for the undertaking referenced above in accordance with 36 CFR 800.5. The ACHP does not participate in Section 106 consultation unless adverse effects are identified. However, as an active participant in consultations regarding renewable energy development and transmission projects, we are working closely with BLM on many of these major infrastructure projects. Please note that the Section 106 regulations require that the agency apply the criteria of adverse effect in consultation with the State Historic Preservation Officer (SHPO)/Tribal Historic Preservation Officer (THPO), Indian tribes, and other consulting parties.

Should the BLM make a finding of adverse effect for this project, please notify us immediately. In addition, if we receive a request for participation from the SHPO, THPO, Indian tribe, or other parties with a demonstrated interest in the undertaking, we may choose to participate at that time. Additionally, should circumstances change, and you determine that our participation is needed to conclude the consultation process, please notify us.

Thank you for providing us with the opportunity to review this undertaking. If you have any questions or require further assistance of the ACHP, please contact Nancy J. Brown, ACHP's liaison to the BLM, at 202-517-0209 or by e-mail at nbrown@achp.gov.

Sincerely,

Caroline D. Hall
Assistant Director
Federal Property Management Section
Office of Federal Agency Programs

ADVISORY COUNCIL ON HISTORIC PRESERVATION
401 F Street, Suite 308 • Washington, DC 20001-2637
Phone: 202-517-0200 • Fax: 202-517-6381 • achp@achp.gov • www.achp.gov

SOUTHERN CALIFORNIA
EDISON®
An EDISON INTERNATIONAL® Company

27 June 2013

Agua Caliente Band of Cahuilla Indians
Patricia Tuck, Tribal Historic Preservation Officer
5401 Dinah Shore Drive
Palm Springs, CA 92264

Subject: SCE West of Devers (WOD) Upgrade Project, Riverside and San Bernardino Counties, California

Dear Ms. Tuck,

The Southern California Edison Company (SCE) proposes to construct the West of Devers (WOD) Upgrade Project (Proposed Project) to increase the power transfer capability of the WOD 220 kV transmission lines between Devers, El Casco, Vista, and San Bernardino substations (see enclosed map). The Proposed Project is needed to facilitate the full deliverability of new electric generation resources being developed in eastern Riverside County, in an area designated by the California Independent System Operator (CAISO) for planning purposes as the Blythe and Desert Center areas. The Proposed Project, planned to be operational by 2020, would be constructed primarily within existing SCE rights-of-way (ROW), although some new ROW would be required.

SCE is conducting a cultural resources study of the proposed project in compliance with the California Environmental Quality Act (CEQA), Public Resources Code Section 21083.2, and the associated implementing guidelines (CCR Title 14 Sections 15064.5, 15064.7, 15126.4(b), Appendix G Section V). Accordingly, the Native American Heritage Commission (NAHC) was asked for a Sacred Lands File search and a list of persons who might have information about the WOD Proposed Project area. You were identified by the NAHC as a possible source.

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Dave Hanna, SCE Archaeologist	Brian McDonald, SCE Tribal Liaison
626-462-8630 / dave.hanna@sce.com	951-249-8467 / brian.mcdonald@sce.com

Thank you.

David C Hanna, Jr.

David C. Hanna, Jr., M.A., RPA
SCE Archaeologist
1218 Fifth Avenue
Monrovia, CA 91016

Enclosure: Project Map

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27 June 2013

Augustine Band of Cahuilla Mission Indians
Karen Kupcha
P.O. Box 849
Coachella, CA 92236

Subject: SCE West of Devers (WOD) Upgrade Project, Riverside and San Bernardino Counties, California

Dear Ms. Kupcha,

The Southern California Edison Company (SCE) proposes to construct the West of Devers (WOD) Upgrade Project (Proposed Project) to increase the power transfer capability of the WOD 220 kV transmission lines between Devers, El Casco, Vista, and San Bernardino substations (see enclosed map). The Proposed Project is needed to facilitate the full deliverability of new electric generation resources being developed in eastern Riverside County, in an area designated by the California Independent System Operator (CAISO) for planning purposes as the Blythe and Desert Center areas. The Proposed Project, planned to be operational by 2020, would be constructed primarily within existing SCE rights-of-way (ROW), although some new ROW would be required.

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Monrovia, CA 91016

Enclosure: Project Map

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27 June 2013

Augustine Band of Cahuilla Mission Indians
Mary Ann Green, Chairperson
P.O. Box 846
Coachella, CA 92236

Subject: SCE West of Devers (WOD) Upgrade Project, Riverside and San Bernardino Counties, California

Dear Ms. Green,

The Southern California Edison Company (SCE) proposes to construct the West of Devers (WOD) Upgrade Project (Proposed Project) to increase the power transfer capability of the WOD 220 kV transmission lines between Devers, El Casco, Vista, and San Bernardino substations (see enclosed map). The Proposed Project is needed to facilitate the full deliverability of new electric generation resources being developed in eastern Riverside County, in an area designated by the California Independent System Operator (CAISO) for planning purposes as the Blythe and Desert Center areas. The Proposed Project, planned to be operational by 2020, would be constructed primarily within existing SCE rights-of-way (ROW), although some new ROW would be required.

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Monrovia, CA 91016

Enclosure: Project Map

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27 June 2013

Cabazon Band of Mission Indians
David Roosevelt, Chairperson
84-245 Indio Springs
Indio, CA 92203-3499

Subject: SCE West of Devers (WOD) Upgrade Project, Riverside and San Bernardino Counties, California

Dear Mr. Roosevelt,

The Southern California Edison Company (SCE) proposes to construct the West of Devers (WOD) Upgrade Project (Proposed Project) to increase the power transfer capability of the WOD 220 kV transmission lines between Devers, El Casco, Vista, and San Bernardino substations (see enclosed map). The Proposed Project is needed to facilitate the full deliverability of new electric generation resources being developed in eastern Riverside County, in an area designated by the California Independent System Operator (CAISO) for planning purposes as the Blythe and Desert Center areas. The Proposed Project, planned to be operational by 2020, would be constructed primarily within existing SCE rights-of-way (ROW), although some new ROW would be required.

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1218 Fifth Avenue
Monrovia, CA 91016

Enclosure: Project Map

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27 June 2013

Cabazon Band of Mission Indians
Judy Stapp, Director of Cultural Affairs
84-245 Indio Springs
Indio, CA 92203-3499

Subject: SCE West of Devers (WOD) Upgrade Project, Riverside and San Bernardino Counties, California

Dear Ms. Stapp,

The Southern California Edison Company (SCE) proposes to construct the West of Devers (WOD) Upgrade Project (Proposed Project) to increase the power transfer capability of the WOD 220 kV transmission lines between Devers, El Casco, Vista, and San Bernardino substations (see enclosed map). The Proposed Project is needed to facilitate the full deliverability of new electric generation resources being developed in eastern Riverside County, in an area designated by the California Independent System Operator (CAISO) for planning purposes as the Blythe and Desert Center areas. The Proposed Project, planned to be operational by 2020, would be constructed primarily within existing SCE rights-of-way (ROW), although some new ROW would be required.

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Monrovia, CA 91016

Enclosure: Project Map

SOUTHERN CALIFORNIA
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27 June 2013

Cahuilla Band of Indians
Luther Salgado, Chairperson
PO Box 391760
Anza, CA 92539

Subject: SCE West of Devers (WOD) Upgrade Project, Riverside and San Bernardino Counties, California

Dear Mr. Salgado,

The Southern California Edison Company (SCE) proposes to construct the West of Devers (WOD) Upgrade Project (Proposed Project) to increase the power transfer capability of the WOD 220 kV transmission lines between Devers, El Casco, Vista, and San Bernardino substations (see enclosed map). The Proposed Project is needed to facilitate the full deliverability of new electric generation resources being developed in eastern Riverside County, in an area designated by the California Independent System Operator (CAISO) for planning purposes as the Blythe and Desert Center areas. The Proposed Project, planned to be operational by 2020, would be constructed primarily within existing SCE rights-of-way (ROW), although some new ROW would be required.

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1218 Fifth Avenue
Monrovia, CA 91016

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27 June 2013

Gabrieleno/Tongva San Gabriel Band of Mission
Anthony Morales, Chairperson
PO Box 693
San Gabriel, CA 91778

Subject: SCE West of Devers (WOD) Upgrade Project, Riverside and San Bernardino Counties, California

Dear Mr. Morales,

The Southern California Edison Company (SCE) proposes to construct the West of Devers (WOD) Upgrade Project (Proposed Project) to increase the power transfer capability of the WOD 220 kV transmission lines between Devers, El Casco, Vista, and San Bernardino substations (see enclosed map). The Proposed Project is needed to facilitate the full deliverability of new electric generation resources being developed in eastern Riverside County, in an area designated by the California Independent System Operator (CAISO) for planning purposes as the Blythe and Desert Center areas. The Proposed Project, planned to be operational by 2020, would be constructed primarily within existing SCE rights-of-way (ROW), although some new ROW would be required.

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Monrovia, CA 91016

Enclosure: Project Map

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27 June 2013

Gabrielino Tongva Nation
Sam Dunlap, Cultural Resources Director
P.O. Box 86908
Los Angeles, CA 90086

Subject: SCE West of Devers (WOD) Upgrade Project, Riverside and San Bernardino Counties, California

Dear Mr. Dunlap,

The Southern California Edison Company (SCE) proposes to construct the West of Devers (WOD) Upgrade Project (Proposed Project) to increase the power transfer capability of the WOD 220 kV transmission lines between Devers, El Casco, Vista, and San Bernardino substations (see enclosed map). The Proposed Project is needed to facilitate the full deliverability of new electric generation resources being developed in eastern Riverside County, in an area designated by the California Independent System Operator (CAISO) for planning purposes as the Blythe and Desert Center areas. The Proposed Project, planned to be operational by 2020, would be constructed primarily within existing SCE rights-of-way (ROW), although some new ROW would be required.

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Enclosure: Project Map

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27 June 2013

Los Coyotes Band of Mission Indians
Shane Chapparosa, Chairman
P.O. Box 189
Warner, CA 92086

Subject: SCE West of Devers (WOD) Upgrade Project, Riverside and San Bernardino Counties, California

Dear Mr. Chapparosa,

The Southern California Edison Company (SCE) proposes to construct the West of Devers (WOD) Upgrade Project (Proposed Project) to increase the power transfer capability of the WOD 220 kV transmission lines between Devers, El Casco, Vista, and San Bernardino substations (see enclosed map). The Proposed Project is needed to facilitate the full deliverability of new electric generation resources being developed in eastern Riverside County, in an area designated by the California Independent System Operator (CAISO) for planning purposes as the Blythe and Desert Center areas. The Proposed Project, planned to be operational by 2020, would be constructed primarily within existing SCE rights-of-way (ROW), although some new ROW would be required.

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Enclosure: Project Map

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27 June 2013

Morongo Band of Mission Indians
Michael Contreras, Cultural Heritage Prog.
12700 Pumarra Road
Banning, CA 92220

Subject: SCE West of Devers (WOD) Upgrade Project, Riverside and San Bernardino Counties, California

Dear Mr. Contreras,

The Southern California Edison Company (SCE) proposes to construct the West of Devers (WOD) Upgrade Project (Proposed Project) to increase the power transfer capability of the WOD 220 kV transmission lines between Devers, El Casco, Vista, and San Bernardino substations (see enclosed map). The Proposed Project is needed to facilitate the full deliverability of new electric generation resources being developed in eastern Riverside County, in an area designated by the California Independent System Operator (CAISO) for planning purposes as the Blythe and Desert Center areas. The Proposed Project, planned to be operational by 2020, would be constructed primarily within existing SCE rights-of-way (ROW), although some new ROW would be required.

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Enclosure: Project Map

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27 June 2013

Ernest H. Siva
Morongo Band of Mission Indians Tribal Elder
9570 Mias Canyon Road
Banning, CA 92220

Subject: SCE West of Devers (WOD) Upgrade Project, Riverside and San Bernardino Counties, California

Dear Mr. Siva,

The Southern California Edison Company (SCE) proposes to construct the West of Devers (WOD) Upgrade Project (Proposed Project) to increase the power transfer capability of the WOD 220 kV transmission lines between Devers, El Casco, Vista, and San Bernardino substations (see enclosed map). The Proposed Project is needed to facilitate the full deliverability of new electric generation resources being developed in eastern Riverside County, in an area designated by the California Independent System Operator (CAISO) for planning purposes as the Blythe and Desert Center areas. The Proposed Project, planned to be operational by 2020, would be constructed primarily within existing SCE rights-of-way (ROW), although some new ROW would be required.

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1218 Fifth Avenue
Monrovia, CA 91016

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SOUTHERN CALIFORNIA
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27 June 2013

Morongo Band of Mission Indians
Robert Martin, Chairperson
12700 Pumarra Road
Banning, CA 92220

Subject: SCE West of Devers (WOD) Upgrade Project, Riverside and San Bernardino Counties, California

Dear Mr. Martin,

The Southern California Edison Company (SCE) proposes to construct the West of Devers (WOD) Upgrade Project (Proposed Project) to increase the power transfer capability of the WOD 220 kV transmission lines between Devers, El Casco, Vista, and San Bernardino substations (see enclosed map). The Proposed Project is needed to facilitate the full deliverability of new electric generation resources being developed in eastern Riverside County, in an area designated by the California Independent System Operator (CAISO) for planning purposes as the Blythe and Desert Center areas. The Proposed Project, planned to be operational by 2020, would be constructed primarily within existing SCE rights-of-way (ROW), although some new ROW would be required.

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27 June 2013

Pechanga Band of Mission Indians
Paul Macarro, Cultural Resources Manager
P.O. Box 1477
Temecula, CA 92593

Subject: SCE West of Devers (WOD) Upgrade Project, Riverside and San Bernardino Counties, California

Dear Mr. Macarro,

The Southern California Edison Company (SCE) proposes to construct the West of Devers (WOD) Upgrade Project (Proposed Project) to increase the power transfer capability of the WOD 220 kV transmission lines between Devers, El Casco, Vista, and San Bernardino substations (see enclosed map). The Proposed Project is needed to facilitate the full deliverability of new electric generation resources being developed in eastern Riverside County, in an area designated by the California Independent System Operator (CAISO) for planning purposes as the Blythe and Desert Center areas. The Proposed Project, planned to be operational by 2020, would be constructed primarily within existing SCE rights-of-way (ROW), although some new ROW would be required.

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SCE Archaeologist
1218 Fifth Avenue
Monrovia, CA 91016

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27 June 2013

Pechanga Cultural Resources Department
Anna Hoover, Cultural Analyst
P.O. Box 2183
Temecula, CA 92593

Subject: SCE West of Devers (WOD) Upgrade Project, Riverside and San Bernardino Counties, California

Dear Ms. Hoover,

The Southern California Edison Company (SCE) proposes to construct the West of Devers (WOD) Upgrade Project (Proposed Project) to increase the power transfer capability of the WOD 220 kV transmission lines between Devers, El Casco, Vista, and San Bernardino substations (see enclosed map). The Proposed Project is needed to facilitate the full deliverability of new electric generation resources being developed in eastern Riverside County, in an area designated by the California Independent System Operator (CAISO) for planning purposes as the Blythe and Desert Center areas. The Proposed Project, planned to be operational by 2020, would be constructed primarily within existing SCE rights-of-way (ROW), although some new ROW would be required.

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Monrovia, CA 91016

Enclosure: Project Map

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27 June 2013

Ramona Band of Cahuilla Mission Indians
Joseph Hamilton, Chairman
P.O. Box 391670
Anza, CA 92539

Subject: SCE West of Devers (WOD) Upgrade Project, Riverside and San Bernardino Counties, California

Dear Mr. Hamilton,

The Southern California Edison Company (SCE) proposes to construct the West of Devers (WOD) Upgrade Project (Proposed Project) to increase the power transfer capability of the WOD 220 kV transmission lines between Devers, El Casco, Vista, and San Bernardino substations (see enclosed map). The Proposed Project is needed to facilitate the full deliverability of new electric generation resources being developed in eastern Riverside County, in an area designated by the California Independent System Operator (CAISO) for planning purposes as the Blythe and Desert Center areas. The Proposed Project, planned to be operational by 2020, would be constructed primarily within existing SCE rights-of-way (ROW), although some new ROW would be required.

SCE is conducting a cultural resources study of the proposed project in compliance with the California Environmental Quality Act (CEQA), Public Resources Code Section 21083.2, and the associated implementing guidelines (CCR Title 14 Sections 15064.5, 15064.7, 15126.4(b), Appendix G Section V). Accordingly, the Native American Heritage Commission (NAHC) was asked for a Sacred Lands File search and a list of persons who might have information about the WOD Proposed Project area. You were identified by the NAHC as a possible source.

This letter requests your input on the proposed project. We invite your questions, comments, or concerns, and are available to meet if you would like to discuss this project in person. Providing comments now does not limit your ability to comment at a later time.

Please direct written replies to Dave Hanna, at the address given below. If you have any questions, please contact either of the following persons at SCE.

Dave Hanna, SCE Archaeologist
626-462-8630 / dave.hanna@sce.com

Brian McDonald, SCE Tribal Liaison
951-249-8467 / brian.mcdonald@sce.com

Thank you.

David C. Hanna, Jr., M.A., RPA
SCE Archaeologist
1218 Fifth Avenue
Monrovia, CA 91016

Enclosure: Project Map

SOUTHERN CALIFORNIA
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27 June 2013

San Manuel Band of Mission Indians
Carla Rodriguez, Chairwoman
26569 Community Center Drive
Highland, CA 92346

Subject: SCE West of Devers (WOD) Upgrade Project, Riverside and San Bernardino Counties, California

Dear Ms. Rodriguez,

The Southern California Edison Company (SCE) proposes to construct the West of Devers (WOD) Upgrade Project (Proposed Project) to increase the power transfer capability of the WOD 220 kV transmission lines between Devers, El Casco, Vista, and San Bernardino substations (see enclosed map). The Proposed Project is needed to facilitate the full deliverability of new electric generation resources being developed in eastern Riverside County, in an area designated by the California Independent System Operator (CAISO) for planning purposes as the Blythe and Desert Center areas. The Proposed Project, planned to be operational by 2020, would be constructed primarily within existing SCE rights-of-way (ROW), although some new ROW would be required.

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Thank you.

David C. Hanna, Jr.

David C. Hanna, Jr., M.A., RPA
SCE Archaeologist
1218 Fifth Avenue
Monrovia, CA 91016

Enclosure: Project Map

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27 June 2013

San Manuel Band of Mission Indians
Daniel McCarthy, M.S., Director-CRM Dept.
26569 Community Center Drive
Highland, CA 92346

Subject: SCE West of Devers (WOD) Upgrade Project, Riverside and San Bernardino Counties, California

Dear Mr. McCarthy,

The Southern California Edison Company (SCE) proposes to construct the West of Devers (WOD) Upgrade Project (Proposed Project) to increase the power transfer capability of the WOD 220 kV transmission lines between Devers, El Casco, Vista, and San Bernardino substations (see enclosed map). The Proposed Project is needed to facilitate the full deliverability of new electric generation resources being developed in eastern Riverside County, in an area designated by the California Independent System Operator (CAISO) for planning purposes as the Blythe and Desert Center areas. The Proposed Project, planned to be operational by 2020, would be constructed primarily within existing SCE rights-of-way (ROW), although some new ROW would be required.

SCE is conducting a cultural resources study of the proposed project in compliance with the California Environmental Quality Act (CEQA), Public Resources Code Section 21083.2, and the associated implementing guidelines (CCR Title 14 Sections 15064.5, 15064.7, 15126.4(b), Appendix G Section V). Accordingly, the Native American Heritage Commission (NAHC) was asked for a Sacred Lands File search and a list of persons who might have information about the WOD Proposed Project area. You were identified by the NAHC as a possible source.

This letter requests your input on the proposed project. We invite your questions, comments, or concerns, and are available to meet if you would like to discuss this project in person. Providing comments now does not limit your ability to comment at a later time.

Please direct written replies to Dave Hanna, at the address given below. If you have any questions, please contact either of the following persons at SCE.

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Thank you.

David C Hanna, Jr.

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SCE Archaeologist
1218 Fifth Avenue
Monrovia, CA 91016

Enclosure: Project Map

SOUTHERN CALIFORNIA
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27 June 2013

Santa Rosa Band of Mission Indians
John Marcus, Chairman
P.O. Box 391820
Anza, CA 92539

Subject: SCE West of Devers (WOD) Upgrade Project, Riverside and San Bernardino Counties, California

Dear Mr. Marcus,

The Southern California Edison Company (SCE) proposes to construct the West of Devers (WOD) Upgrade Project (Proposed Project) to increase the power transfer capability of the WOD 220 kV transmission lines between Devers, El Casco, Vista, and San Bernardino substations (see enclosed map). The Proposed Project is needed to facilitate the full deliverability of new electric generation resources being developed in eastern Riverside County, in an area designated by the California Independent System Operator (CAISO) for planning purposes as the Blythe and Desert Center areas. The Proposed Project, planned to be operational by 2020, would be constructed primarily within existing SCE rights-of-way (ROW), although some new ROW would be required.

SCE is conducting a cultural resources study of the proposed project in compliance with the California Environmental Quality Act (CEQA), Public Resources Code Section 21083.2, and the associated implementing guidelines (CCR Title 14 Sections 15064.5, 15064.7, 15126.4(b), Appendix G Section V). Accordingly, the Native American Heritage Commission (NAHC) was asked for a Sacred Lands File search and a list of persons who might have information about the WOD Proposed Project area. You were identified by the NAHC as a possible source.

This letter requests your input on the proposed project. We invite your questions, comments, or concerns, and are available to meet if you would like to discuss this project in person. Providing comments now does not limit your ability to comment at a later time.

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Thank you.

David C. Hanna, Jr.

David C. Hanna, Jr., M.A., RPA
SCE Archaeologist
1218 Fifth Avenue
Monrovia, CA 91016

Enclosure: Project Map

SOUTHERN CALIFORNIA
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27 June 2013

Serrano Nation of Mission Indians
Goldie Walker, Chairwoman
P.O. Box 343
Patton, CA 92369

Subject: SCE West of Devers (WOD) Upgrade Project, Riverside and San Bernardino Counties, California

Dear Ms. Walker,

The Southern California Edison Company (SCE) proposes to construct the West of Devers (WOD) Upgrade Project (Proposed Project) to increase the power transfer capability of the WOD 220 kV transmission lines between Devers, El Casco, Vista, and San Bernardino substations (see enclosed map). The Proposed Project is needed to facilitate the full deliverability of new electric generation resources being developed in eastern Riverside County, in an area designated by the California Independent System Operator (CAISO) for planning purposes as the Blythe and Desert Center areas. The Proposed Project, planned to be operational by 2020, would be constructed primarily within existing SCE rights-of-way (ROW), although some new ROW would be required.

SCE is conducting a cultural resources study of the proposed project in compliance with the California Environmental Quality Act (CEQA), Public Resources Code Section 21083.2, and the associated implementing guidelines (CCR Title 14 Sections 15064.5, 15064.7, 15126.4(b), Appendix G Section V). Accordingly, the Native American Heritage Commission (NAHC) was asked for a Sacred Lands File search and a list of persons who might have information about the WOD Proposed Project area. You were identified by the NAHC as a possible source.

This letter requests your input on the proposed project. We invite your questions, comments, or concerns, and are available to meet if you would like to discuss this project in person. Providing comments now does not limit your ability to comment at a later time.

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Thank you.

David C Hanna, Jr.

David C. Hanna, Jr., M.A., RPA
SCE Archaeologist
1218 Fifth Avenue
Monrovia, CA 91016

Enclosure: Project Map

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27 June 2013

Soboba Band of Luiseño Indians
Joseph Ontiveros, Cultural Resource Department
P.O. BOX 487
San Jacinto, CA 92581

Subject: SCE West of Devers (WOD) Upgrade Project, Riverside and San Bernardino Counties, California

Dear Mr. Ontiveros,

The Southern California Edison Company (SCE) proposes to construct the West of Devers (WOD) Upgrade Project (Proposed Project) to increase the power transfer capability of the WOD 220 kV transmission lines between Devers, El Casco, Vista, and San Bernardino substations (see enclosed map). The Proposed Project is needed to facilitate the full deliverability of new electric generation resources being developed in eastern Riverside County, in an area designated by the California Independent System Operator (CAISO) for planning purposes as the Blythe and Desert Center areas. The Proposed Project, planned to be operational by 2020, would be constructed primarily within existing SCE rights-of-way (ROW), although some new ROW would be required.

SCE is conducting a cultural resources study of the proposed project in compliance with the California Environmental Quality Act (CEQA), Public Resources Code Section 21083.2, and the associated implementing guidelines (CCR Title 14 Sections 15064.5, 15064.7, 15126.4(b), Appendix G Section V). Accordingly, the Native American Heritage Commission (NAHC) was asked for a Sacred Lands File search and a list of persons who might have information about the WOD Proposed Project area. You were identified by the NAHC as a possible source.

This letter requests your input on the proposed project. We invite your questions, comments, or concerns, and are available to meet if you would like to discuss this project in person. Providing comments now does not limit your ability to comment at a later time.

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Thank you.

David C Hanna, Jr.

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SCE Archaeologist
1218 Fifth Avenue
Monrovia, CA 91016

Enclosure: Project Map

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27 June 2013

Torres-Martinez Desert Cahuilla Indians
Diana L. Chihuahua, Vice Chairperson, Cultural
P.O. Box 1160
Thermal, CA 92274

Subject: SCE West of Devers (WOD) Upgrade Project, Riverside and San Bernardino Counties, California

Dear Ms. Chihuahua,

The Southern California Edison Company (SCE) proposes to construct the West of Devers (WOD) Upgrade Project (Proposed Project) to increase the power transfer capability of the WOD 220 kV transmission lines between Devers, El Casco, Vista, and San Bernardino substations (see enclosed map). The Proposed Project is needed to facilitate the full deliverability of new electric generation resources being developed in eastern Riverside County, in an area designated by the California Independent System Operator (CAISO) for planning purposes as the Blythe and Desert Center areas. The Proposed Project, planned to be operational by 2020, would be constructed primarily within existing SCE rights-of-way (ROW), although some new ROW would be required.

SCE is conducting a cultural resources study of the proposed project in compliance with the California Environmental Quality Act (CEQA), Public Resources Code Section 21083.2, and the associated implementing guidelines (CCR Title 14 Sections 15064.5, 15064.7, 15126.4(b), Appendix G Section V). Accordingly, the Native American Heritage Commission (NAHC) was asked for a Sacred Lands File search and a list of persons who might have information about the WOD Proposed Project area. You were identified by the NAHC as a possible source.

This letter requests your input on the proposed project. We invite your questions, comments, or concerns, and are available to meet if you would like to discuss this project in person. Providing comments now does not limit your ability to comment at a later time.

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Thank you.

David C. Hanna, Jr.

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1218 Fifth Avenue
Monrovia, CA 91016

Enclosure: Project Map

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27 June 2013

Torres-Martinez Desert Cahuilla Indians
Mary Resvaloso, Chairperson
P.O. Box 1160
Thermal, CA 92274

Subject: SCE West of Devers (WOD) Upgrade Project, Riverside and San Bernardino Counties, California

Dear Ms. Resvaloso,

The Southern California Edison Company (SCE) proposes to construct the West of Devers (WOD) Upgrade Project (Proposed Project) to increase the power transfer capability of the WOD 220 kV transmission lines between Devers, El Casco, Vista, and San Bernardino substations (see enclosed map). The Proposed Project is needed to facilitate the full deliverability of new electric generation resources being developed in eastern Riverside County, in an area designated by the California Independent System Operator (CAISO) for planning purposes as the Blythe and Desert Center areas. The Proposed Project, planned to be operational by 2020, would be constructed primarily within existing SCE rights-of-way (ROW), although some new ROW would be required.

SCE is conducting a cultural resources study of the proposed project in compliance with the California Environmental Quality Act (CEQA), Public Resources Code Section 21083.2, and the associated implementing guidelines (CCR Title 14 Sections 15064.5, 15064.7, 15126.4(b), Appendix G Section V). Accordingly, the Native American Heritage Commission (NAHC) was asked for a Sacred Lands File search and a list of persons who might have information about the WOD Proposed Project area. You were identified by the NAHC as a possible source.

This letter requests your input on the proposed project. We invite your questions, comments, or concerns, and are available to meet if you would like to discuss this project in person. Providing comments now does not limit your ability to comment at a later time.

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Thank you.

David C Hanna, Jr.

David C. Hanna, Jr., M.A., RPA
SCE Archaeologist
1218 Fifth Avenue
Monrovia, CA 91016

Enclosure: Project Map

United States Department of the Interior
BUREAU OF LAND MANAGEMENT
Palm Springs-South Coast Field Office
1201 Bird Center Drive
Palm Springs, CA 92262-8001
(760) 833-7100 Fax (760) 833-7199

Visit us on the Internet at
www.blm.gov/ca/palmsprings/

MAY 20 2014

In Reply Refer To:
CAD060/CAD000.06
2831-03/2850(P)
CACA-0063162

CERTIFIED MAIL 7102 3460 0000 2911 9632
RETURN RECEIPT REQUESTED

Mr. Jeff Grubbe
Chairman
Agua Caliente Band of Cahuilla Indians
5401 Dinah Shore Drive
Palm Springs, CA 92264

Dear Chairman Grubbe:

The Bureau of Land Management (BLM) is reviewing an application for a right-of-way (ROW) grant and proposed Plan of Development (POD) submitted by Southern California Edison (SCE) to upgrade, operate, and maintain approximately 1.1 miles of two 220 kV transmission lines on BLM administered lands, and remove some existing lines. The project is part of SCE's proposed upgrades to Segment 6 of the larger six-segment West of Devers (WOD) Upgrade Project. Through WOD, SCE proposes to upgrade 45 miles of two 220kV transmission lines between Palm Springs and San Bernardino, California (see Enclosure 1). The proposed project includes:

- replacement of two existing single-circuit and one existing double-circuit 220 kV transmission lines and towers with two double-circuit 220 kV transmission lines and higher capacity equipment;
- relocation of two miles of 66 kV sub-transmission lines and four miles of 12 kV distribution lines;
- upgrades to six existing substations; and
- installation of telecommunications equipment.

The proposed Project crosses lands managed by the BLM, lands in private ownership, as well as portions of the Morongo Band of Mission Indians Tribal Reservation. Most of the proposed Project is located within an existing SCE ROW corridor.

Under Federal law, the BLM is responsible for processing ROW applications for facilities proposed to be constructed and operated on public lands. In processing the applications, the BLM must comply with the requirements of the National Environmental Policy Act (NEPA), which requires that Federal agencies reviewing projects under their jurisdiction consider the environmental impacts associated with their construction and operation. An Environmental

Impact Statement/Environmental Impact Report (EIS/EIR) will be prepared to evaluate the impacts of the proposed WOD Project. The California Public Utilities Commission (CPUC) is the State lead agency for the preparation of the EIR in compliance with the requirements of the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000 et. seq.), CEQA implementing guidelines (California Code of Regulations [CCR] Title 14, Section 15000 et. seq.). The BLM is the Federal lead agency for the preparation of the EIS in compliance with the requirements of the NEPA, the Council on Environmental Quality (CEQ) regulation for implementing NEPA (40 Code of Federal Regulations [CFR] 1500 – 1508), and the BLM NEPA guidance handbook (H-1790-1).

A joint EIS/EIR will be prepared to evaluate the proposed Project. The BLM is also the Federal lead agency for compliance with Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations (36 CFR Part 800). The proposed Project will concurrently be analyzed for its potential to affect historic properties as required by Section 106 of the NHPA, and we will utilize the public review process described in the NEPA to partially meet our public involvement responsibilities under the NHPA. In addition, Section 106 documentation for this proposed Project will be published on our website at http://www.blm.gov/ca/st/en/fo/cdd.html.

Consistent with the principles stated in Executive Order 13175 (Consultation and Coordination with Indian Tribal Governments, November 6, 2000), and the Executive Memorandum of April 29, 1994, (Government to Government Relations with Native American Tribal Governments), we are contacting you at the earliest stages of project review and seeking your views and comments, particularly with regard to any issues that may affect resources that are important to your Tribe. This letter serves to provide initial notification of the proposed Project, explain the role of the BLM, and invite the Agua Caliente Band of Cahuilla Indians to enter into government-to-government consultation. The BLM will update the Tribe on the proposed Project throughout the review process, unless the Tribe has no further interest in consulting on this proposed Project. We would request that the Tribe inform us if it has no interest in this proposed Project or entering into consultation. If you are aware of any other Tribes, individuals, or affiliated Native American organizations that should be contacted regarding this proposed Project, please let us know. A list of other Tribal Government officials receiving this letter is provided for your reference (Enclosure 2).

Specific to Section 106 of the NHPA, the implementing regulation at 36 CFR 800 requires the BLM to consult with Indian tribes that attach religious or cultural significance to historic properties that may be affected by an undertaking. We request your assistance in identifying any issues or concerns the Tribe may have about the proposed Project, including identifying places of religious and cultural significance that might be affected by the proposed Project. To facilitate government-to-government consultation on this proposed Project for the purposes of Section 106 and to meet the requirements of the regulations, the BLM also requests that the Agua Caliente Band of Cahuilla Indians tribal government identify those tribal representatives who have been designated to consult with the BLM on this proposed Project.

Project Status

SCE has developed a Proponents Environmental Assessment as part of the CPUC CEQA review requirements. SCE has contracted with LSA, an environmental consultant, to identify and

evaluate all historic and archaeological resources within the APE in support of the Proponents Environmental Assessment. To date, LSA has conducted a literature review, records search, and BLM Class III archaeological and built environment survey of the direct effects APE. The information gathered during the development of the Proponents Environmental Assessment was incorporated into the POD that was submitted to the BLM. The BLM is currently reviewing the draft Class III report prepared by LSA.

LSA is currently developing an evaluation plan for one archaeological site (CA-SBR-2311H/Guachama Rancheria) that requires additional archaeological testing in order to further evaluate. LSA is also developing a contingency evaluation plan for the evaluation of any additional resources that may be impacted based on a planned final project engineering design that is scheduled to be completed by June, 2014. This plan will further refine the current POD to account for information gathered during the Proponents Environmental Assessment studies and provide final locations for all proposed structures, equipment, and work areas. Once the final design has been released, the BLM and CPUC will reassess the cultural resources studies and determine if any additional evaluation needs must be addressed. Any additional evaluation that may become necessary, as a result of the final design completion, will be conducted according to the contingency developed in the evaluation plan.

The BLM has also requested that SCE conduct an ethnographic literature review and indirect effects analysis for the proposed Project. Since the proposed Project is an upgrade to existing transmission lines and is located almost entirely within an existing ROW corridor, the BLM has defined the indirect effects APE as one-half-mile beyond the direct effects APE. SCE's contractor will be analyzing indirect effects from the proposed Project to the location, setting, feeling, and association of known NRHP eligible or listed properties within the indirect effects APE. This study will include known historic, archaeological, and tribal resources.

If you would like to designate a representative to consult with the BLM, know of any other Tribes that should be contacted regarding this proposed Project, or have any questions or concerns about the proposed Project please contact:

Brian Paul, Project Manager
Renewable Energy Coordination Office
Bureau of Land Management, California Desert District Office
1661 S. 4th Street
El Centro, CA 92243
Phone: 760-337-4445
Email: rpaul@blm.gov

You can also contact Tiffany Thomas, Renewable Energy Coordination Office Archaeologist and Cultural Resources lead for the proposed Project, by telephone at (951) 697-5365, or email at tathomas@blm.gov.

We look forward to hearing from you regarding your interest in the West of Devers Upgrade Project and our invitation to initiate government-to-government consultation. If you have

additional questions or we can provide any clarification, please do not hesitate to contact us. I can be reached by telephone at (760) 326-7000 or by e-mail at jkalish@blm.gov.

Sincerely,

John R. Kalish
Field Manager

Electronic CC:
Greg Miller (gmiller@blm.gov)
Brian Paul (rpaul@blm.gov)
Tiffany Thomas (tathomas@blm.gov)
George Kline (gkline@blm.gov)
Mark Purdy (mpurdy@blm.gov)

Enclosures:
1 - Project Area Map
2 – Tribal Contact List

United States Department of the Interior
BUREAU OF LAND MANAGEMENT
Palm Springs-South Coast Field Office
1201 Bird Center Drive
Palm Springs, CA 92262-8001
(760) 833-7100 Fax (760) 833-7199

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MAY 30 2014

In Reply Refer To:
CAD060/CAD000.06
2831-03/2850(P)
CACA-0063162

CERTIFIED MAIL 7012 3460 0000 2911 9649
RETURN RECEIPT REQUESTED

Ms. Mary Ann Green
Chairwoman
Augustine Band of Cahuilla Indians
P.O. Box 846
Coachella, CA 92236

Dear Chairwoman Green:

The Bureau of Land Management (BLM) is reviewing an application for a right-of-way (ROW) grant and proposed Plan of Development (POD) submitted by Southern California Edison (SCE) to upgrade, operate, and maintain approximately 1.1 miles of two 220 kV transmission lines on BLM administered lands, and remove some existing lines. The project is part of SCE's proposed upgrades to Segment 6 of the larger six-segment West of Devers (WOD) Upgrade Project. Through WOD, SCE proposes to upgrade 45 miles of two 220kV transmission lines between Palm Springs and San Bernardino, California (see Enclosure 1). The proposed project includes:

- replacement of two existing single-circuit and one existing double-circuit 220 kV transmission lines and towers with two double-circuit 220 kV transmission lines and higher capacity equipment;
- relocation of two miles of 66 kV sub-transmission lines and four miles of 12 kV distribution lines;
- upgrades to six existing substations; and
- installation of telecommunications equipment.

The proposed Project crosses lands managed by the BLM, lands in private ownership, as well as portions of the Morongo Band of Mission Indians Tribal Reservation. Most of the proposed Project is located within an existing SCE ROW corridor.

Under Federal law, the BLM is responsible for processing ROW applications for facilities proposed to be constructed and operated on public lands. In processing the applications, the BLM must comply with the requirements of the National Environmental Policy Act (NEPA), which requires that Federal agencies reviewing projects under their jurisdiction consider the environmental impacts associated with their construction and operation. An Environmental

Impact Statement/Environmental Impact Report (EIS/EIR) will be prepared to evaluate the impacts of the proposed WOD Project. The California Public Utilities Commission (CPUC) is the State lead agency for the preparation of the EIR in compliance with the requirements of the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000 et. seq.), CEQA implementing guidelines (California Code of Regulations [CCR] Title 14, Section 15000 et. seq.). The BLM is the Federal lead agency for the preparation of the EIS in compliance with the requirements of the NEPA, the Council on Environmental Quality (CEQ) regulation for implementing NEPA (40 Code of Federal Regulations [CFR] 1500 – 1508), and the BLM NEPA guidance handbook (H-1790-1).

A joint EIS/EIR will be prepared to evaluate the proposed Project. The BLM is also the Federal lead agency for compliance with Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations (36 CFR Part 800). The proposed Project will concurrently be analyzed for its potential to affect historic properties as required by Section 106 of the NHPA, and we will utilize the public review process described in the NEPA to partially meet our public involvement responsibilities under the NHPA. In addition, Section 106 documentation for this proposed Project will be published on our website at http://www.blm.gov/ca/st/en/fo/cdd.html.

Consistent with the principles stated in Executive Order 13175 (Consultation and Coordination with Indian Tribal Governments, November 6, 2000), and the Executive Memorandum of April 29, 1994, (Government to Government Relations with Native American Tribal Governments), we are contacting you at the earliest stages of project review and seeking your views and comments, particularly with regard to any issues that may affect resources that are important to your Tribe. This letter serves to provide initial notification of the proposed Project, explain the role of the BLM, and invite the Augustine Band of Cahuilla Indians to enter into government-to-government consultation. The BLM will update the Tribe on the proposed Project throughout the review process, unless the Tribe has no further interest in consulting on this proposed Project. We would request that the Tribe inform us if it has no interest in this proposed Project or entering into consultation. If you are aware of any other Tribes, individuals, or affiliated Native American organizations that should be contacted regarding this proposed Project, please let us know. A list of other Tribal Government officials receiving this letter is provided for your reference (Enclosure 2).

Specific to Section 106 of the NHPA, the implementing regulation at 36 CFR 800 requires the BLM to consult with Indian tribes that attach religious or cultural significance to historic properties that may be affected by an undertaking. We request your assistance in identifying any issues or concerns the Tribe may have about the proposed Project, including identifying places of religious and cultural significance that might be affected by the proposed Project. To facilitate government-to-government consultation on this proposed Project for the purposes of Section 106 and to meet the requirements of the regulations, the BLM also requests that the Augustine Band of Cahuilla Indians tribal government identify those tribal representatives who have been designated to consult with the BLM on this proposed Project.

Project Status

SCE has developed a Proponents Environmental Assessment as part of the CPUC CEQA review requirements. SCE has contracted with LSA, an environmental consultant, to identify and

evaluate all historic and archaeological resources within the APE in support of the Proponents Environmental Assessment. To date, LSA has conducted a literature review, records search, and BLM Class III archaeological and built environment survey of the direct effects APE. The information gathered during the development of the Proponents Environmental Assessment was incorporated into the POD that was submitted to the BLM. The BLM is currently reviewing the draft Class III report prepared by LSA.

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If you would like to designate a representative to consult with the BLM, know of any other Tribes that should be contacted regarding this proposed Project, or have any questions or concerns about the proposed Project please contact:

Brian Paul, Project Manager
Renewable Energy Coordination Office
Bureau of Land Management, California Desert District Office
1661 S. 4th Street
El Centro, CA 92243
Phone: 760-337-4445
Email: rpaul@blm.gov

You can also contact Tiffany Thomas, Renewable Energy Coordination Office Archaeologist and Cultural Resources lead for the proposed Project, by telephone at (951) 697-5365, or email at tathomas@blm.gov.

We look forward to hearing from you regarding your interest in the West of Devers Upgrade Project and our invitation to initiate government-to-government consultation. If you have

additional questions or we can provide any clarification, please do not hesitate to contact us. I can be reached by telephone at (760) 326-7000 or by e-mail at jkalish@blm.gov.

Sincerely,

John R. Kalish
Field Manager

Electronic CC:
Greg Miller (gmiller@blm.gov)
Brian Paul (rpaul@blm.gov)
Tiffany Thomas (tathomas@blm.gov)
George Kline (gkline@blm.gov)
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MAY 20 2014

In Reply Refer To:
CAD060/CAD000.06
2831-03/2850(P)
CACA-0063162

CERTIFIED MAIL 7012 3460 0000 2912 2465
RETURN RECEIPT REQUESTED

Mr. Doug Welmas
Chairman
Cabazon Band of Mission Indians
84-245 Indio Springs Parkway
Indio, CA 92203-3449

Dear Chairman Welmas:

The Bureau of Land Management (BLM) is reviewing an application for a right-of-way (ROW) grant and proposed Plan of Development (POD) submitted by Southern California Edison (SCE) to upgrade, operate, and maintain approximately 1.1 miles of two 220 kV transmission lines on BLM administered lands, and remove some existing lines. The project is part of SCE's proposed upgrades to Segment 6 of the larger six-segment West of Devers (WOD) Upgrade Project. Through WOD, SCE proposes to upgrade 45 miles of two 220kV transmission lines between Palm Springs and San Bernardino, California (see Enclosure 1). The proposed project includes:

- replacement of two existing single-circuit and one existing double-circuit 220 kV transmission lines and towers with two double-circuit 220 kV transmission lines and higher capacity equipment;
- relocation of two miles of 66 kV sub-transmission lines and four miles of 12 kV distribution lines;
- upgrades to six existing substations; and
- installation of telecommunications equipment.

The proposed Project crosses lands managed by the BLM, lands in private ownership, as well as portions of the Morongo Band of Mission Indians Tribal Reservation. Most of the proposed Project is located within an existing SCE ROW corridor.

Under Federal law, the BLM is responsible for processing ROW applications for facilities proposed to be constructed and operated on public lands. In processing the applications, the BLM must comply with the requirements of the National Environmental Policy Act (NEPA), which requires that Federal agencies reviewing projects under their jurisdiction consider the environmental impacts associated with their construction and operation. An Environmental

Impact Statement/Environmental Impact Report (EIS/EIR) will be prepared to evaluate the impacts of the proposed WOD Project. The California Public Utilities Commission (CPUC) is the State lead agency for the preparation of the EIR in compliance with the requirements of the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000 et. seq.), CEQA implementing guidelines (California Code of Regulations [CCR] Title 14, Section 15000 et. seq.). The BLM is the Federal lead agency for the preparation of the EIS in compliance with the requirements of the NEPA, the Council on Environmental Quality (CEQ) regulation for implementing NEPA (40 Code of Federal Regulations [CFR] 1500 – 1508), and the BLM NEPA guidance handbook (H-1790-1).

A joint EIS/EIR will be prepared to evaluate the proposed Project. The BLM is also the Federal lead agency for compliance with Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations (36 CFR Part 800). The proposed Project will concurrently be analyzed for its potential to affect historic properties as required by Section 106 of the NHPA, and we will utilize the public review process described in the NEPA to partially meet our public involvement responsibilities under the NHPA. In addition, Section 106 documentation for this proposed Project will be published on our website at http://www.blm.gov/ca/st/en/fo/cdd.html.

Consistent with the principles stated in Executive Order 13175 (Consultation and Coordination with Indian Tribal Governments, November 6, 2000), and the Executive Memorandum of April 29, 1994, (Government to Government Relations with Native American Tribal Governments), we are contacting you at the earliest stages of project review and seeking your views and comments, particularly with regard to any issues that may affect resources that are important to your Tribe. This letter serves to provide initial notification of the proposed Project, explain the role of the BLM, and invite the Cabazon Band of Mission Indians to enter into government-to-government consultation. The BLM will update the Tribe on the proposed Project throughout the review process, unless the Tribe has no further interest in consulting on this proposed Project. We would request that the Tribe inform us if it has no interest in this proposed Project or entering into consultation. If you are aware of any other Tribes, individuals, or affiliated Native American organizations that should be contacted regarding this proposed Project, please let us know. A list of other Tribal Government officials receiving this letter is provided for your reference (Enclosure 2).

Specific to Section 106 of the NHPA, the implementing regulation at 36 CFR 800 requires the BLM to consult with Indian tribes that attach religious or cultural significance to historic properties that may be affected by an undertaking. We request your assistance in identifying any issues or concerns the Tribe may have about the proposed Project, including identifying places of religious and cultural significance that might be affected by the proposed Project. To facilitate government-to-government consultation on this proposed Project for the purposes of Section 106 and to meet the requirements of the regulations, the BLM also requests that the Cabazon Band of Mission Indians tribal government identify those tribal representatives who have been designated to consult with the BLM on this proposed Project.

Project Status
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Renewable Energy Coordination Office
Bureau of Land Management, California Desert District Office
1661 S. 4th Street
El Centro, CA 92243
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additional questions or we can provide any clarification, please do not hesitate to contact us. I can be reached by telephone at (760) 326-7000 or by e-mail at jkalish@blm.gov.

Sincerely,

John R. Kalish
Field Manager

Electronic CC:
Greg Miller (gmiller@blm.gov)
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MAY 30 2014

In Reply Refer To:
CAD060/CAD000.06
2831-03/2850(P)
CACA-0063162

CERTIFIED MAIL 7012 3460 0000 2912 1550
RETURN RECEIPT REQUESTED

Mr. Luther Salgado, Sr.
Chairman
Cahuilla Band of Mission Indians
P.O. Box 391760
Anza, CA 92539-1760

Dear Chairman Salgado:

The Bureau of Land Management (BLM) is reviewing an application for a right-of-way (ROW) grant and proposed Plan of Development (POD) submitted by Southern California Edison (SCE) to upgrade, operate, and maintain approximately 1.1 miles of two 220 kV transmission lines on BLM administered lands, and remove some existing lines. The project is part of SCE's proposed upgrades to Segment 6 of the larger six-segment West of Devers (WOD) Upgrade Project. Through WOD, SCE proposes to upgrade 45 miles of two 220kV transmission lines between Palm Springs and San Bernardino, California (see Enclosure 1). The proposed project includes:

- replacement of two existing single-circuit and one existing double-circuit 220 kV transmission lines and towers with two double-circuit 220 kV transmission lines and higher capacity equipment;
- relocation of two miles of 66 kV sub-transmission lines and four miles of 12 kV distribution lines;
- upgrades to six existing substations; and
- installation of telecommunications equipment.

The proposed Project crosses lands managed by the BLM, lands in private ownership, as well as portions of the Morongo Band of Mission Indians Tribal Reservation. Most of the proposed Project is located within an existing SCE ROW corridor.

Under Federal law, the BLM is responsible for processing ROW applications for facilities proposed to be constructed and operated on public lands. In processing the applications, the BLM must comply with the requirements of the National Environmental Policy Act (NEPA), which requires that Federal agencies reviewing projects under their jurisdiction consider the environmental impacts associated with their construction and operation. An Environmental

Impact Statement/Environmental Impact Report (EIS/EIR) will be prepared to evaluate the impacts of the proposed WOD Project. The California Public Utilities Commission (CPUC) is the State lead agency for the preparation of the EIR in compliance with the requirements of the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000 et. seq.), CEQA implementing guidelines (California Code of Regulations [CCR] Title 14, Section 15000 et. seq.). The BLM is the Federal lead agency for the preparation of the EIS in compliance with the requirements of the NEPA, the Council on Environmental Quality (CEQ) regulation for implementing NEPA (40 Code of Federal Regulations [CFR] 1500 – 1508), and the BLM NEPA guidance handbook (H-1790-1).

A joint EIS/EIR will be prepared to evaluate the proposed Project. The BLM is also the Federal lead agency for compliance with Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations (36 CFR Part 800). The proposed Project will concurrently be analyzed for its potential to affect historic properties as required by Section 106 of the NHPA, and we will utilize the public review process described in the NEPA to partially meet our public involvement responsibilities under the NHPA. In addition, Section 106 documentation for this proposed Project will be published on our website at http://www.blm.gov/ca/st/en/fo/cdd.html.

Consistent with the principles stated in Executive Order 13175 (Consultation and Coordination with Indian Tribal Governments, November 6, 2000), and the Executive Memorandum of April 29, 1994, (Government to Government Relations with Native American Tribal Governments), we are contacting you at the earliest stages of project review and seeking your views and comments, particularly with regard to any issues that may affect resources that are important to your Tribe. This letter serves to provide initial notification of the proposed Project, explain the role of the BLM, and invite the Cahuilla Band of Mission Indians to enter into government-to-government consultation. The BLM will update the Tribe on the proposed Project throughout the review process, unless the Tribe has no further interest in consulting on this proposed Project. We would request that the Tribe inform us if it has no interest in this proposed Project or entering into consultation. If you are aware of any other Tribes, individuals, or affiliated Native American organizations that should be contacted regarding this proposed Project, please let us know. A list of other Tribal Government officials receiving this letter is provided for your reference (Enclosure 2).

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Sincerely,

John R. Kalish
Field Manager

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MAY 20 2014

In Reply Refer To:
CAD060/CAD000.06
2831-03/2850(P)
CACA-0063162

CERTIFIED MAIL 7012 3460 0000 2912 1567
RETURN RECEIPT REQUESTED

Mr. Robert Martin
Chairman
Morongo Band of Mission Indians
12700 Pumarra Rd.
Banning, CA 92220

Dear Chairman Martin:

The Bureau of Land Management (BLM) is reviewing an application for a right-of-way (ROW) grant and proposed Plan of Development (POD) submitted by Southern California Edison (SCE) to upgrade, operate, and maintain approximately 1.1 miles of two 220 kV transmission lines on BLM administered lands, and remove some existing lines. The project is part of SCE's proposed upgrades to Segment 6 of the larger six-segment West of Devers (WOD) Upgrade Project. Through WOD, SCE proposes to upgrade 45 miles of two 220kV transmission lines between Palm Springs and San Bernardino, California (see Enclosure 1). The proposed project includes:

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Sincerely,

John R. Kalish
Field Manager

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MAY 20 2014

In Reply Refer To:
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CACA-0063162

CERTIFIED MAIL 7012 3460 0000 2912 1574
RETURN RECEIPT REQUESTED

Mr. Robert Smith
Chairman
Pala Band of Mission Indians
12196 Pala Mission Road
Pala, CA 92059

Dear Chairman Smith:

The Bureau of Land Management (BLM) is reviewing an application for a right-of-way (ROW) grant and proposed Plan of Development (POD) submitted by Southern California Edison (SCE) to upgrade, operate, and maintain approximately 1.1 miles of two 220 kV transmission lines on BLM administered lands, and remove some existing lines. The project is part of SCE's proposed upgrades to Segment 6 of the larger six-segment West of Devers (WOD) Upgrade Project. Through WOD, SCE proposes to upgrade 45 miles of two 220kV transmission lines between Palm Springs and San Bernardino, California (see Enclosure 1). The proposed project includes:

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If you would like to designate a representative to consult with the BLM, know of any other Tribes that should be contacted regarding this proposed Project, or have any questions or concerns about the proposed Project please contact:

Brian Paul, Project Manager
Renewable Energy Coordination Office
Bureau of Land Management, California Desert District Office
1661 S. 4th Street
El Centro, CA 92243
Phone: 760-337-4445
Email: rpaul@blm.gov

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We look forward to hearing from you regarding your interest in the West of Devers Upgrade Project and our invitation to initiate government-to-government consultation. If you have

additional questions or we can provide any clarification, please do not hesitate to contact us. I can be reached by telephone at (760) 326-7000 or by e-mail at jkalish@blm.gov.

Sincerely,

John R. Kalish

John R. Kalish
Field Manager

Electronic CC:
Greg Miller (gmiller@blm.gov)
Brian Paul (rpaul@blm.gov)
Tiffany Thomas (tathomas@blm.gov)
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MAY 20 2014

In Reply Refer To:
CAD060/CAD000.06
2831-03/2850(P)
CACA-0063162

CERTIFIED MAIL 7012 3460 0000 2912 1581
RETURN RECEIPT REQUESTED

Mr. Randall Majel
Chairman
Pauma/Yuima Band of Mission Indians
1010 Reservation Road
Pauma Valley, CA 92061

Dear Chairman Majel:

The Bureau of Land Management (BLM) is reviewing an application for a right-of-way (ROW) grant and proposed Plan of Development (POD) submitted by Southern California Edison (SCE) to upgrade, operate, and maintain approximately 1.1 miles of two 220 kV transmission lines on BLM administered lands, and remove some existing lines. The project is part of SCE's proposed upgrades to Segment 6 of the larger six-segment West of Devers (WOD) Upgrade Project. Through WOD, SCE proposes to upgrade 45 miles of two 220kV transmission lines between Palm Springs and San Bernardino, California (see Enclosure 1). The proposed project includes:

- replacement of two existing single-circuit and one existing double-circuit 220 kV transmission lines and towers with two double-circuit 220 kV transmission lines and higher capacity equipment;
- relocation of two miles of 66 kV sub-transmission lines and four miles of 12 kV distribution lines;
- upgrades to six existing substations; and
- installation of telecommunications equipment.

The proposed Project crosses lands managed by the BLM, lands in private ownership, as well as portions of the Morongo Band of Mission Indians Tribal Reservation. Most of the proposed Project is located within an existing SCE ROW corridor.

Under Federal law, the BLM is responsible for processing ROW applications for facilities proposed to be constructed and operated on public lands. In processing the applications, the BLM must comply with the requirements of the National Environmental Policy Act (NEPA), which requires that Federal agencies reviewing projects under their jurisdiction consider the environmental impacts associated with their construction and operation. An Environmental

Impact Statement/Environmental Impact Report (EIS/EIR) will be prepared to evaluate the impacts of the proposed WOD Project. The California Public Utilities Commission (CPUC) is the State lead agency for the preparation of the EIR in compliance with the requirements of the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000 et. seq.), CEQA implementing guidelines (California Code of Regulations [CCR] Title 14, Section 15000 et. seq.). The BLM is the Federal lead agency for the preparation of the EIS in compliance with the requirements of the NEPA, the Council on Environmental Quality (CEQ) regulation for implementing NEPA (40 Code of Federal Regulations [CFR] 1500 – 1508), and the BLM NEPA guidance handbook (H-1790-1).

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Project Status

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evaluate all historic and archaeological resources within the APE in support of the Proponents Environmental Assessment. To date, LSA has conducted a literature review, records search, and BLM Class III archaeological and built environment survey of the direct effects APE. The information gathered during the development of the Proponents Environmental Assessment was incorporated into the POD that was submitted to the BLM. The BLM is currently reviewing the draft Class III report prepared by LSA.

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If you would like to designate a representative to consult with the BLM, know of any other Tribes that should be contacted regarding this proposed Project, or have any questions or concerns about the proposed Project please contact:

Brian Paul, Project Manager
Renewable Energy Coordination Office
Bureau of Land Management, California Desert District Office
1661 S. 4th Street
El Centro, CA 92243
Phone: 760-337-4445
Email: rpaul@blm.gov

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additional questions or we can provide any clarification, please do not hesitate to contact us. I can be reached by telephone at (760) 326-7000 or by e-mail at jkalish@blm.gov.

Sincerely,

John R. Kalish
Field Manager

Electronic CC:
Greg Miller (gmiller@blm.gov)
Brian Paul (rpaul@blm.gov)
Tiffany Thomas (tathomas@blm.gov)
George Kline (gkline@blm.gov)
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MAY 20 2014

In Reply Refer To:
CAD060/CAD000.06
2831-03/2850(P)
CACA-0063162

CERTIFIED MAIL 7012 3460 0000 2912 1598
RETURN RECEIPT REQUESTED

Mr. Mark Macarro
Chairman
Pechanga Band of Mission Indians
P.O. Box 1477
Temecula, CA 92593

Dear Chairman Macarro:

The Bureau of Land Management (BLM) is reviewing an application for a right-of-way (ROW) grant and proposed Plan of Development (POD) submitted by Southern California Edison (SCE) to upgrade, operate, and maintain approximately 1.1 miles of two 220 kV transmission lines on BLM administered lands, and remove some existing lines. The project is part of SCE's proposed upgrades to Segment 6 of the larger six-segment West of Devers (WOD) Upgrade Project. Through WOD, SCE proposes to upgrade 45 miles of two 220kV transmission lines between Palm Springs and San Bernardino, California (see Enclosure 1). The proposed project includes:

- replacement of two existing single-circuit and one existing double-circuit 220 kV transmission lines and towers with two double-circuit 220 kV transmission lines and higher capacity equipment;
- relocation of two miles of 66 kV sub-transmission lines and four miles of 12 kV distribution lines;
- upgrades to six existing substations; and
- installation of telecommunications equipment.

The proposed Project crosses lands managed by the BLM, lands in private ownership, as well as portions of the Morongo Band of Mission Indians Tribal Reservation. Most of the proposed Project is located within an existing SCE ROW corridor.

Under Federal law, the BLM is responsible for processing ROW applications for facilities proposed to be constructed and operated on public lands. In processing the applications, the BLM must comply with the requirements of the National Environmental Policy Act (NEPA), which requires that Federal agencies reviewing projects under their jurisdiction consider the environmental impacts associated with their construction and operation. An Environmental

Impact Statement/Environmental Impact Report (EIS/EIR) will be prepared to evaluate the impacts of the proposed WOD Project. The California Public Utilities Commission (CPUC) is the State lead agency for the preparation of the EIR in compliance with the requirements of the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000 et. seq.), CEQA implementing guidelines (California Code of Regulations [CCR] Title 14, Section 15000 et. seq.). The BLM is the Federal lead agency for the preparation of the EIS in compliance with the requirements of the NEPA, the Council on Environmental Quality (CEQ) regulation for implementing NEPA (40 Code of Federal Regulations [CFR] 1500 – 1508), and the BLM NEPA guidance handbook (H-1790-1).

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Sincerely,

John R. Kalish

John R. Kalish
Field Manager

Electronic CC:
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MAY 20 2014

In Reply Refer To:
CAD060/CAD000.06
2831-03/2850(P)
CACA-0063162

CERTIFIED MAIL 7012 3460 0000 2912 1604
RETURN RECEIPT REQUESTED

Mr. Joseph Hamilton
Chairman
Ramona Band of Mission Indians
P.O. Box 391372
Anza, CA 92539

Dear Chairman Hamilton:

The Bureau of Land Management (BLM) is reviewing an application for a right-of-way (ROW) grant and proposed Plan of Development (POD) submitted by Southern California Edison (SCE) to upgrade, operate, and maintain approximately 1.1 miles of two 220 kV transmission lines on BLM administered lands, and remove some existing lines. The project is part of SCE's proposed upgrades to Segment 6 of the larger six-segment West of Devers (WOD) Upgrade Project. Through WOD, SCE proposes to upgrade 45 miles of two 220kV transmission lines between Palm Springs and San Bernardino, California (see Enclosure 1). The proposed project includes:

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Sincerely,

John R. Kalish
Field Manager

Electronic CC:
Greg Miller (gmiller@blm.gov)
Brian Paul (rpaul@blm.gov)
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MAY 20 2014

In Reply Refer To:
CAD060/CAD000.06
2831-03/2850(P)
CACA-0063162

CERTIFIED MAIL 7012 3460 0000 2912 1611
RETURN RECEIPT REQUESTED

Mr. Frederick"Bo" Mazzetti
Chairman
Rincon Luiseno Band of Indians
1 West Tribal Road
Valley Center, CA 92082

Dear Chairman Mazzetti:

The Bureau of Land Management (BLM) is reviewing an application for a right-of-way (ROW) grant and proposed Plan of Development (POD) submitted by Southern California Edison (SCE) to upgrade, operate, and maintain approximately 1.1 miles of two 220 kV transmission lines on BLM administered lands, and remove some existing lines. The project is part of SCE's proposed upgrades to Segment 6 of the larger six-segment West of Devers (WOD) Upgrade Project. Through WOD, SCE proposes to upgrade 45 miles of two 220kV transmission lines between Palm Springs and San Bernardino, California (see Enclosure 1). The proposed project includes:

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Specific to Section 106 of the NHPA, the implementing regulation at 36 CFR 800 requires the BLM to consult with Indian tribes that attach religious or cultural significance to historic properties that may be affected by an undertaking. We request your assistance in identifying any issues or concerns the Tribe may have about the proposed Project, including identifying places of religious and cultural significance that might be affected by the proposed Project. To facilitate government-to-government consultation on this proposed Project for the purposes of Section 106 and to meet the requirements of the regulations, the BLM also requests that the Rincon Luiseno Band of Indians tribal government identify those tribal representatives who have been designated to consult with the BLM on this proposed Project.

Project Status

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If you would like to designate a representative to consult with the BLM, know of any other Tribes that should be contacted regarding this proposed Project, or have any questions or concerns about the proposed Project please contact:

Brian Paul, Project Manager
Renewable Energy Coordination Office
Bureau of Land Management, California Desert District Office
1661 S. 4th Street
El Centro, CA 92243
Phone: 760-337-4445
Email: rpaul@blm.gov

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We look forward to hearing from you regarding your interest in the West of Devers Upgrade Project and our invitation to initiate government-to-government consultation. If you have

additional questions or we can provide any clarification, please do not hesitate to contact us. I can be reached by telephone at (760) 326-7000 or by e-mail at jkalish@blm.gov.

Sincerely,

John R. Kalish
Field Manager

Electronic CC:
Greg Miller (gmiller@blm.gov)
Brian Paul (rpaul@blm.gov)
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MAY 20 2014

In Reply Refer To:
CAD060/CAD000.06
2831-03/2850(P)
CACA-0063162

CERTIFIED MAIL 7012 3460 0000 2912 1628
RETURN RECEIPT REQUESTED

Ms. Lynn Valbuena
Chairwoman
San Manuel Band of Mission Indians
26569 Community Center Drive
Highland, CA 92346

Dear Chairwoman Valbuena:

The Bureau of Land Management (BLM) is reviewing an application for a right-of-way (ROW) grant and proposed Plan of Development (POD) submitted by Southern California Edison (SCE) to upgrade, operate, and maintain approximately 1.1 miles of two 220 kV transmission lines on BLM administered lands, and remove some existing lines. The project is part of SCE's proposed upgrades to Segment 6 of the larger six-segment West of Devers (WOD) Upgrade Project. Through WOD, SCE proposes to upgrade 45 miles of two 220kV transmission lines between Palm Springs and San Bernardino, California (see Enclosure 1). The proposed project includes:

- replacement of two existing single-circuit and one existing double-circuit 220 kV transmission lines and towers with two double-circuit 220 kV transmission lines and higher capacity equipment;
- relocation of two miles of 66 kV sub-transmission lines and four miles of 12 kV distribution lines;
- upgrades to six existing substations; and
- installation of telecommunications equipment.

The proposed Project crosses lands managed by the BLM, lands in private ownership, as well as portions of the Morongo Band of Mission Indians Tribal Reservation. Most of the proposed Project is located within an existing SCE ROW corridor.

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Project Status

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Bureau of Land Management, California Desert District Office
1661 S. 4th Street
El Centro, CA 92243
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We look forward to hearing from you regarding your interest in the West of Devers Upgrade Project and our invitation to initiate government-to-government consultation. If you have

additional questions or we can provide any clarification, please do not hesitate to contact us. I can be reached by telephone at (760) 326-7000 or by e-mail at jkalish@blm.gov.

Sincerely,

John R. Kalish
Field Manager

Electronic CC:
Greg Miller (gmiller@blm.gov)
Brian Paul (rpaul@blm.gov)
Tiffany Thomas (tathomas@blm.gov)
George Kline (gkline@blm.gov)
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MAY 20 2014

In Reply Refer To:
CAD060/CAD000.06
2831-03/2850(P)
CACA-0063162

CERTIFIED MAIL 7012 3460 0000 2912 1635
RETURN RECEIPT REQUESTED

Ms. Rosemary Morillo
Chairwoman
Soboba Band of Luiseno Indians
P.O. Box 487
San Jacinto, CA 92581

Dear Chairwoman Morillo:

The Bureau of Land Management (BLM) is reviewing an application for a right-of-way (ROW) grant and proposed Plan of Development (POD) submitted by Southern California Edison (SCE) to upgrade, operate, and maintain approximately 1.1 miles of two 220 kV transmission lines on BLM administered lands, and remove some existing lines. The project is part of SCE's proposed upgrades to Segment 6 of the larger six-segment West of Devers (WOD) Upgrade Project. Through WOD, SCE proposes to upgrade 45 miles of two 220kV transmission lines between Palm Springs and San Bernardino, California (see Enclosure 1). The proposed project includes:

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The proposed Project crosses lands managed by the BLM, lands in private ownership, as well as portions of the Morongo Band of Mission Indians Tribal Reservation. Most of the proposed Project is located within an existing SCE ROW corridor.

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Sincerely,

John R. Kalish
Field Manager

Electronic CC:
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MAY 20 2014

In Reply Refer To:
CAD060/CAD000.06
2831-03/2850(P)
CACA-0063162

CERTIFIED MAIL 7012 3460 0000 2912 1642
RETURN RECEIPT REQUESTED

Ms. Mary Resvaloso
Chairwoman
Torres-Martinez Desert Cahuilla Indians
P.O. Box 1160
Thermal, CA 92274

Dear Chairwoman Resvaloso:

The Bureau of Land Management (BLM) is reviewing an application for a right-of-way (ROW) grant and proposed Plan of Development (POD) submitted by Southern California Edison (SCE) to upgrade, operate, and maintain approximately 1.1 miles of two 220 kV transmission lines on BLM administered lands, and remove some existing lines. The project is part of SCE's proposed upgrades to Segment 6 of the larger six-segment West of Devers (WOD) Upgrade Project. Through WOD, SCE proposes to upgrade 45 miles of two 220kV transmission lines between Palm Springs and San Bernardino, California (see Enclosure 1). The proposed project includes:

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Sincerely,

John R. Kalish
Field Manager

Electronic CC:
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MAY 20 2014

In Reply Refer To:
CAD060/CAD000.06
2831-03/2850(P)
CACA-0063162

CERTIFIED MAIL 7012 3460 0000 2912 1659
RETURN RECEIPT REQUESTED

Mr. Darrell Mike
Chairman
Twenty-nine Palms Band of Mission Indians
46-200 Harrison Place
Coachella, CA 92236

Dear Chairman Mike:

The Bureau of Land Management (BLM) is reviewing an application for a right-of-way (ROW) grant and proposed Plan of Development (POD) submitted by Southern California Edison (SCE) to upgrade, operate, and maintain approximately 1.1 miles of two 220 kV transmission lines on BLM administered lands, and remove some existing lines. The project is part of SCE's proposed upgrades to Segment 6 of the larger six-segment West of Devers (WOD) Upgrade Project. Through WOD, SCE proposes to upgrade 45 miles of two 220kV transmission lines between Palm Springs and San Bernardino, California (see Enclosure 1). The proposed project includes:

- replacement of two existing single-circuit and one existing double-circuit 220 kV transmission lines and towers with two double-circuit 220 kV transmission lines and higher capacity equipment;
- relocation of two miles of 66 kV sub-transmission lines and four miles of 12 kV distribution lines;
- upgrades to six existing substations; and
- installation of telecommunications equipment.

The proposed Project crosses lands managed by the BLM, lands in private ownership, as well as portions of the Morongo Band of Mission Indians Tribal Reservation. Most of the proposed Project is located within an existing SCE ROW corridor.

Under Federal law, the BLM is responsible for processing ROW applications for facilities proposed to be constructed and operated on public lands. In processing the applications, the BLM must comply with the requirements of the National Environmental Policy Act (NEPA), which requires that Federal agencies reviewing projects under their jurisdiction consider the environmental impacts associated with their construction and operation. An Environmental

Impact Statement/Environmental Impact Report (EIS/EIR) will be prepared to evaluate the impacts of the proposed WOD Project. The California Public Utilities Commission (CPUC) is the State lead agency for the preparation of the EIR in compliance with the requirements of the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000 et. seq.), CEQA implementing guidelines (California Code of Regulations [CCR] Title 14, Section 15000 et. seq.). The BLM is the Federal lead agency for the preparation of the EIS in compliance with the requirements of the NEPA, the Council on Environmental Quality (CEQ) regulation for implementing NEPA (40 Code of Federal Regulations [CFR] 1500 – 1508), and the BLM NEPA guidance handbook (H-1790-1).

A joint EIS/EIR will be prepared to evaluate the proposed Project. The BLM is also the Federal lead agency for compliance with Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations (36 CFR Part 800). The proposed Project will concurrently be analyzed for its potential to affect historic properties as required by Section 106 of the NHPA, and we will utilize the public review process described in the NEPA to partially meet our public involvement responsibilities under the NHPA. In addition, Section 106 documentation for this proposed Project will be published on our website at http://www.blm.gov/ca/st/en/fo/cdd.html.

Consistent with the principles stated in Executive Order 13175 (Consultation and Coordination with Indian Tribal Governments, November 6, 2000), and the Executive Memorandum of April 29, 1994, (Government to Government Relations with Native American Tribal Governments), we are contacting you at the earliest stages of project review and seeking your views and comments, particularly with regard to any issues that may affect resources that are important to your Tribe. This letter serves to provide initial notification of the proposed Project, explain the role of the BLM, and invite the Twenty-nine Palms Band of Mission Indians to enter into government-to-government consultation. The BLM will update the Tribe on the proposed Project throughout the review process, unless the Tribe has no further interest in consulting on this proposed Project. We would request that the Tribe inform us if it has no interest in this proposed Project or entering into consultation. If you are aware of any other Tribes, individuals, or affiliated Native American organizations that should be contacted regarding this proposed Project, please let us know. A list of other Tribal Government officials receiving this letter is provided for your reference (Enclosure 2).

Specific to Section 106 of the NHPA, the implementing regulation at 36 CFR 800 requires the BLM to consult with Indian tribes that attach religious or cultural significance to historic properties that may be affected by an undertaking. We request your assistance in identifying any issues or concerns the Tribe may have about the proposed Project, including identifying places of religious and cultural significance that might be affected by the proposed Project. To facilitate government-to-government consultation on this proposed Project for the purposes of Section 106 and to meet the requirements of the regulations, the BLM also requests that the Twenty-nine Palms Band of Mission Indians tribal government identify those tribal representatives who have been designated to consult with the BLM on this proposed Project.

Project Status
SCE has developed a Proponents Environmental Assessment as part of the CPUC CEQA review requirements. SCE has contracted with LSA, an environmental consultant, to identify and

evaluate all historic and archaeological resources within the APE in support of the Proponents Environmental Assessment. To date, LSA has conducted a literature review, records search, and BLM Class III archaeological and built environment survey of the direct effects APE. The information gathered during the development of the Proponents Environmental Assessment was incorporated into the POD that was submitted to the BLM. The BLM is currently reviewing the draft Class III report prepared by LSA.

LSA is currently developing an evaluation plan for one archaeological site (CA-SBR-2311H/Guachama Rancheria) that requires additional archaeological testing in order to further evaluate. LSA is also developing a contingency evaluation plan for the evaluation of any additional resources that may be impacted based on a planned final project engineering design that is scheduled to be completed by June, 2014. This plan will further refine the current POD to account for information gathered during the Proponents Environmental Assessment studies and provide final locations for all proposed structures, equipment, and work areas. Once the final design has been released, the BLM and CPUC will reassess the cultural resources studies and determine if any additional evaluation needs must be addressed. Any additional evaluation that may become necessary, as a result of the final design completion, will be conducted according to the contingency developed in the evaluation plan.

The BLM has also requested that SCE conduct an ethnographic literature review and indirect effects analysis for the proposed Project. Since the proposed Project is an upgrade to existing transmission lines and is located almost entirely within an existing ROW corridor, the BLM has defined the indirect effects APE as one-half-mile beyond the direct effects APE. SCE's contractor will be analyzing indirect effects from the proposed Project to the location, setting, feeling, and association of known NRHP eligible or listed properties within the indirect effects APE. This study will include known historic, archaeological, and tribal resources.

If you would like to designate a representative to consult with the BLM, know of any other Tribes that should be contacted regarding this proposed Project, or have any questions or concerns about the proposed Project please contact:

Brian Paul, Project Manager
Renewable Energy Coordination Office
Bureau of Land Management, California Desert District Office
1661 S. 4th Street
El Centro, CA 92243
Phone: 760-337-4445
Email: rpaul@blm.gov

You can also contact Tiffany Thomas, Renewable Energy Coordination Office Archaeologist and Cultural Resources lead for the proposed Project, by telephone at (951) 697-5365, or email at tathomas@blm.gov.

We look forward to hearing from you regarding your interest in the West of Devers Upgrade Project and our invitation to initiate government-to-government consultation. If you have

additional questions or we can provide any clarification, please do not hesitate to contact us. I can be reached by telephone at (760) 326-7000 or by e-mail at jkalish@blm.gov.

Sincerely,

John R. Kalish

John R. Kalish
Field Manager

Electronic CC:
Greg Miller (gmiller@blm.gov)
Brian Paul (rpaul@blm.gov)
Tiffany Thomas (tathomas@blm.gov)
George Kline (gkline@blm.gov)
Mark Purdy (mpurdy@blm.gov)

Enclosures:
1 - Project Area Map
2 – Tribal Contact List

United States Department of the Interior
BUREAU OF LAND MANAGEMENT
Palm Springs-South Coast Field Office
1201 Bird Center Drive
Palm Springs, CA 92262-8001
(760) 833-7100 Fax (760) 833-7199

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AUG 22 2014

In Reply Refer To:
CACA-063162
2831-03 (P)
CAD000.06/CAD060

Chairman Jeff Grubbe
Agua Caliente Band of Cahuilla Indians
5401 Dinah Shore Drive
Palm Springs, CA 92264

Dear Chairman Grubbe:

The Bureau of Land Management (BLM) is continuing consultation on Southern California Edison's (SCE) proposed West of Devers (WOD) Upgrade Project. The proposed Project crosses lands managed by the BLM, lands in private ownership, as well as portions of the Morongo Band of Mission Indians Tribal Reservation. The BLM is the Federal lead agency for compliance with the National Environmental Policy Act (NEPA) and Section 106 of the National Historic Preservation Act (NHPA); the California Public Utilities Commission (CPUC) is the lead state agency for compliance with the California Environmental Quality Act (CEQA). We have previously provided official notification regarding the proposed project and invited the Agua Caliente Band of Cahuilla Indians to consult in a government-to-government manner in a letter dated May 20, 2014. The purpose of this letter is to provide an update on our efforts to identify historic properties that may be affected by the undertaking and to notify you of archaeological site testing that will be conducted to support this effort. The BLM would also like to reiterate our invitation and request to engage in government-to-government consultation with your Tribe on this project.

Identification and Evaluation Efforts Update
Since our last letter the Class III archaeological and built environment survey report has been completed. The final report, entitled *Cultural Resources Assessment and Class III Inventory, West of Devers Project, San Bernardino and Riverside Counties, California,* prepared by LSA, is include with this letter (enclosure 1). The final report includes the results of a literature review, records search, Class III archaeological survey and historic built environment survey within the Area of Potential Effects (APE) for the proposed project. Additional archival research on 33 historic buildings, structures, and features identified during the Class III survey is currently being conducted.

Based on the results of the Class III surveys, the BLM and CPUC have determined that additional information is required to evaluate seven archaeological resources for their eligibility for listing in the National Register of Historic Places (NRHP) and the California Register of Historic Resources (CRHR). Six archaeological sites (CA-RIV-11411, CA-RIV-11417, CA-RIV-11419, CA-RIV-11426, CA-SBR-11624H, and P-36-24295) require additional archival research in order to be evaluated under Criteria A/1 and B/2 for their association with significant events or persons in history. One archaeological site (CA-SBR-2311H) will require archaeological testing in order to be evaluated under Criterion D/4 for its information potential. A testing plan has been developed to guide the additional research efforts (enclosure 2). The archival research is currently underway and the fieldwork is currently being

coordinated with the private land-owner. SCE will be contacting you soon regarding your interest in participating in the fieldwork.

The BLM is still gathering information regarding significant resources that may be affected by the proposed Project. We again request your assistance in identifying any issues or concerns the Tribe may have about the proposed Project, including identifying places of religious and cultural significance that might be affected by the proposed Project. To facilitate government-to-government consultation on this proposed Project for the purposes of Section 106 and to meet the requirements of the regulations, the BLM also requests that the Agua Caliente Band of Cahuilla Indians tribal government identify those tribal representatives who have been designated to consult with the BLM on this proposed Project.

If you would like to designate a representative to consult with the BLM, have any information regarding places of religious or cultural significance that may be affected by the proposed project, or have any questions or concerns about the proposed Project, please contact Frank McMenimen, Project Manager, by telephone at (760) 833-7150, or by email at fmcmenimen@blm.gov, or Tiffany Thomas, Renewable Energy Archaeologist, by telephone at (951) 697-5365, or by email at tathomas@blm.gov.

We look forward to hearing from you regarding your interest in the West of Devers Upgrade Project and our invitation to continue government-to-government consultation. If you would like to schedule a government-to-government consultation meeting please do not hesitate to contact me. I can be reached by telephone at (760) 326-7000 or by e-mail at twakefie@blm.gov.

Sincerely,

Timothy J. Wakefield
Acting Field Manager

Enclosures (2):
1 - *Cultural Resources Assessment and Class III Inventory, West of Devers Project, San Bernardino and Riverside Counties, California*
2 – *Cultural Resources Evaluation Report and Testing Plan for Southern California Edison Company's West of Devers Upgrade Project, Riverside and San Bernardino Counties, California*

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Tiffany Thomas, Renewable Energy Archaeologist (tathomas@blm.gov)
George Kline, Archaeologist, Palm Springs (gkline@blm.gov)

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AUG 22 2014

Chairman Jeff Grubbe
Agua Caliente Band of Cahuilla Indians
5401 Dinah Shore Drive
Palm Springs, CA 92264

Dear Chairman Grubbe:

The Bureau of Land Management (BLM) is continuing consultation on Southern California Edison's (SCE) proposed West of Devers (WOD) Upgrade Project. The proposed Project crosses lands managed by the BLM, lands in private ownership, as well as portions of the Morongo Band of Mission Indians Tribal Reservation. The BLM is the Federal lead agency for compliance with the National Environmental Policy Act (NEPA) and Section 106 of the National Historic Preservation Act (NHPA); the California Public Utilities Commission (CPUC) is the lead state agency for compliance with the California Environmental Quality Act (CEQA). We have previously provided official notification regarding the proposed project and invited the Agua Caliente Band of Cahuilla Indians to consult in a government-to-government manner in a letter dated May 20, 2014. The purpose of this letter is to provide an update on our efforts to identify historic properties that may be affected by the undertaking and to notify you of archaeological site testing that will be conducted to support this effort. The BLM would also like to reiterate our invitation and request to engage in government-to-government consultation with your Tribe on this project.

Identification and Evaluation Efforts Update
Since our last letter the Class III archaeological and built environment survey report has been completed. The final report, entitled *Cultural Resources Assessment and Class III Inventory, West of Devers Project, San Bernardino and Riverside Counties, California,* prepared by LSA, is include with this letter (enclosure 1). The final report includes the results of a literature review, records search, Class III archaeological survey and historic built environment survey within the Area of Potential Effects (APE) for the proposed project. Additional archival research on 33 historic buildings, structures, and features identified during the Class III survey is currently being conducted.

Based on the results of the Class III surveys, the BLM and CPUC have determined that additional information is required to evaluate seven archaeological resources for their eligibility for listing in the National Register of Historic Places (NRHP) and the California Register of Historic Resources (CRHR). Six archaeological sites (CA-RIV-11411, CA-RIV-11417, CA-RIV-11419, CA-RIV-11426, CA-SBR-11624H, and P-36-24295) require additional archival research in order to be evaluated under Criteria A/1 and B/2 for their association with significant events or persons in history. One archaeological site (CA-SBR-2311H) will require archaeological testing in order to be evaluated under Criterion D/4 for its information potential. A testing plan has been developed to guide the additional research efforts (enclosure 2). The archival research is currently underway and the fieldwork is currently being

coordinated with the private land-owner. SCE will be contacting you soon regarding your interest in participating in the fieldwork.

The BLM is still gathering information regarding significant resources that may be affected by the proposed Project. We again request your assistance in identifying any issues or concerns the Tribe may have about the proposed Project, including identifying places of religious and cultural significance that might be affected by the proposed Project. To facilitate government-to-government consultation on this proposed Project for the purposes of Section 106 and to meet the requirements of the regulations, the BLM also requests that the Agua Caliente Band of Cahuilla Indians tribal government identify those tribal representatives who have been designated to consult with the BLM on this proposed Project.

If you would like to designate a representative to consult with the BLM, have any information regarding places of religious or cultural significance that may be affected by the proposed project, or have any questions or concerns about the proposed Project, please contact Frank McMenimen, Project Manager, by telephone at (760) 833-7150, or by email at fmcmenimen@blm.gov, or Tiffany Thomas, Renewable Energy Archaeologist, by telephone at (951) 697-5365, or by email at tathomas@blm.gov.

We look forward to hearing from you regarding your interest in the West of Devers Upgrade Project and our invitation to continue government-to-government consultation. If you would like to schedule a government-to-government consultation meeting please do not hesitate to contact me. I can be reached by telephone at (760) 326-7000 or by e-mail at twakefie@blm.gov.

Sincerely,

Timothy J. Wakefield
Acting Field Manager

Enclosures (2):
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In Reply Refer To:
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AUG 22 2014

Chairwoman Mary Ann Green
Augustine Band of Cahuilla Indians
84-001 Avenue 54
Coachella, CA 92236

Dear Chairwoman Green:

The Bureau of Land Management (BLM) is continuing consultation on Southern California Edison's (SCE) proposed West of Devers (WOD) Upgrade Project. The proposed Project crosses lands managed by the BLM, lands in private ownership, as well as portions of the Morongo Band of Mission Indians Tribal Reservation. The BLM is the Federal lead agency for compliance with the National Environmental Policy Act (NEPA) and Section 106 of the National Historic Preservation Act (NHPA); the California Public Utilities Commission (CPUC) is the lead state agency for compliance with the California Environmental Quality Act (CEQA). We have previously provided official notification regarding the proposed project and invited the Augustine Band of Cahuilla Indians to consult in a government-to-government manner in a letter dated May 20, 2014. The purpose of this letter is to provide an update on our efforts to identify historic properties that may be affected by the undertaking and to notify you of archaeological site testing that will be conducted to support this effort. The BLM would also like to reiterate our invitation and request to engage in government-to-government consultation with your Tribe on this project.

Identification and Evaluation Efforts Update

Since our last letter the Class III archaeological and built environment survey report has been completed. The final report, entitled *Cultural Resources Assessment and Class III Inventory, West of Devers Project, San Bernardino and Riverside Counties, California,* prepared by LSA, is include with this letter (enclosure 1). The final report includes the results of a literature review, records search, Class III archaeological survey and historic built environment survey within the Area of Potential Effects (APE) for the proposed project. Additional archival research on 33 historic buildings, structures, and features identified during the Class III survey is currently being conducted.

Based on the results of the Class III surveys, the BLM and CPUC have determined that additional information is required to evaluate seven archaeological resources for their eligibility for listing in the National Register of Historic Places (NRHP) and the California Register of Historic Resources (CRHR). Six archaeological sites (CA-RIV-11411, CA-RIV-11417, CA-RIV-11419, CA-RIV-11426, CA-SBR-11624H, and P-36-24295) require additional archival research in order to be evaluated under Criteria A/1 and B/2 for their association with significant events or persons in history. One archaeological site (CA-SBR-2311H) will require archaeological testing in order to be evaluated under Criterion D/4 for its information potential. A testing plan has been developed to guide the additional research efforts (enclosure 2). The archival research is currently underway and the fieldwork is currently being

coordinated with the private land-owner. SCE will be contacting you soon regarding your interest in participating in the fieldwork.

The BLM is still gathering information regarding significant resources that may be affected by the proposed Project. We again request your assistance in identifying any issues or concerns the Tribe may have about the proposed Project, including identifying places of religious and cultural significance that might be affected by the proposed Project. To facilitate government-to-government consultation on this proposed Project for the purposes of Section 106 and to meet the requirements of the regulations, the BLM also requests that the Agua Caliente Band of Cahuilla Indians tribal government identify those tribal representatives who have been designated to consult with the BLM on this proposed Project.

If you would like to designate a representative to consult with the BLM, have any information regarding places of religious or cultural significance that may be affected by the proposed project, or have any questions or concerns about the proposed Project, please contact Frank McMenimen, Project Manager, by telephone at (760) 833-7150, or by email at fmcmenimen@blm.gov, or Tiffany Thomas, Renewable Energy Archaeologist, by telephone at (951) 697-5365, or by email at tathomas@blm.gov.

We look forward to hearing from you regarding your interest in the West of Devers Upgrade Project and our invitation to continue government-to-government consultation. If you would like to schedule a government-to-government consultation meeting please do not hesitate to contact me. I can be reached by telephone at (760) 326-7000 or by e-mail at twakefie@blm.gov.

Sincerely,

Timothy J. Wakefield
Acting Field Manager

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In Reply Refer To:
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2831-03 (P)
CAD000.06/CAD060

AUG 22 2014

Chairman Doug Welmas
Cabazon Band of Mission Indians
84-245 Indio Springs Parkway
Indio, CA 92203-3449

Dear Chairman Welmas:

The Bureau of Land Management (BLM) is continuing consultation on Southern California Edison's (SCE) proposed West of Devers (WOD) Upgrade Project. The proposed Project crosses lands managed by the BLM, lands in private ownership, as well as portions of the Morongo Band of Mission Indians Tribal Reservation. The BLM is the Federal lead agency for compliance with the National Environmental Policy Act (NEPA) and Section 106 of the National Historic Preservation Act (NHPA); the California Public Utilities Commission (CPUC) is the lead state agency for compliance with the California Environmental Quality Act (CEQA). We have previously provided official notification regarding the proposed project and invited the Cabazon Band of Mission Indians to consult in a government-to-government manner in a letter dated May 20, 2014. The purpose of this letter is to provide an update on our efforts to identify historic properties that may be affected by the undertaking and to notify you of archaeological site testing that will be conducted to support this effort. The BLM would also like to reiterate our invitation and request to engage in government-to-government consultation with your Tribe on this project.

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Sincerely,

Timothy J. Wakefield
Acting Field Manager

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In Reply Refer To:
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2831-03 (P)
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AUG 22 2014

Chairman Luther Salgado, Sr.
Cahuilla Band of Mission Indians
52701 US Highway 371
Anza, CA 92539-1760

Dear Chairman Salgado:

The Bureau of Land Management (BLM) is continuing consultation on Southern California Edison's (SCE) proposed West of Devers (WOD) Upgrade Project. The proposed Project crosses lands managed by the BLM, lands in private ownership, as well as portions of the Morongo Band of Mission Indians Tribal Reservation. The BLM is the Federal lead agency for compliance with the National Environmental Policy Act (NEPA) and Section 106 of the National Historic Preservation Act (NHPA); the California Public Utilities Commission (CPUC) is the lead state agency for compliance with the California Environmental Quality Act (CEQA). We have previously provided official notification regarding the proposed project and invited the Cahuilla Band of Mission Indians to consult in a government-to-government manner in a letter dated May 20, 2014. The purpose of this letter is to provide an update on our efforts to identify historic properties that may be affected by the undertaking and to notify you of archaeological site testing that will be conducted to support this effort. The BLM would also like to reiterate our invitation and request to engage in government-to-government consultation with your Tribe on this project.

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Timothy J. Wakefield
Acting Field Manager

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In Reply Refer To:
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2831-03 (P)
CAD000.06/CAD060

AUG 22 2014

Chairman Edward Smith
Chemehuevi Indian Tribe
1990 Palo Verde Drive
Havasu Lake, CA 92363

Dear Chairman Smith:

The Bureau of Land Management (BLM) is continuing consultation on Southern California Edison's (SCE) proposed West of Devers (WOD) Upgrade Project. The proposed Project crosses lands managed by the BLM, lands in private ownership, as well as portions of the Morongo Band of Mission Indians Tribal Reservation. The BLM is the Federal lead agency for compliance with the National Environmental Policy Act (NEPA) and Section 106 of the National Historic Preservation Act (NHPA); the California Public Utilities Commission (CPUC) is the lead state agency for compliance with the California Environmental Quality Act (CEQA). We have previously provided official notification regarding the proposed project and invited the Chemehuevi Indian Tribe to consult in a government-to-government manner in a letter dated May 20, 2014. The purpose of this letter is to provide an update on our efforts to identify historic properties that may be affected by the undertaking and to notify you of archaeological site testing that will be conducted to support this effort. The BLM would also like to reiterate our invitation and request to engage in government-to-government consultation with your Tribe on this project.

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Based on the results of the Class III surveys, the BLM and CPUC have determined that additional information is required to evaluate seven archaeological resources for their eligibility for listing in the National Register of Historic Places (NRHP) and the California Register of Historic Resources (CRHR). Six archaeological sites (CA-RIV-11411, CA-RIV-11417, CA-RIV-11419, CA-RIV-11426, CA-SBR-11624H, and P-36-24295) require additional archival research in order to be evaluated under Criteria A/1 and B/2 for their association with significant events or persons in history. One archaeological site (CA-SBR-2311H) will require archaeological testing in order to be evaluated under Criterion D/4 for its information potential. A testing plan has been developed to guide the additional research efforts (enclosure 2). The archival research is currently underway and the fieldwork is currently being

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If you would like to designate a representative to consult with the BLM, have any information regarding places of religious or cultural significance that may be affected by the proposed project, or have any questions or concerns about the proposed Project, please contact Frank McMenimen, Project Manager, by telephone at (760) 833-7150, or by email at fmcmenimen@blm.gov, or Tiffany Thomas, Renewable Energy Archaeologist, by telephone at (951) 697-5365, or by email at tathomas@blm.gov.

We look forward to hearing from you regarding your interest in the West of Devers Upgrade Project and our invitation to continue government-to-government consultation. If you would like to schedule a government-to-government consultation meeting please do not hesitate to contact me. I can be reached by telephone at (760) 326-7000 or by e-mail at twakefie@blm.gov.

Sincerely,

Timothy J. Wakefield
Acting Field Manager

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Chairwoman Sherry Cordova
Cocopah Indian Tribe
14515 S. Veterans Dr.
Somerton, AZ 85350

Dear Chairwoman Cordova:

The Bureau of Land Management (BLM) is continuing consultation on Southern California Edison's (SCE) proposed West of Devers (WOD) Upgrade Project. The proposed Project crosses lands managed by the BLM, lands in private ownership, as well as portions of the Morongo Band of Mission Indians Tribal Reservation. The BLM is the Federal lead agency for compliance with the National Environmental Policy Act (NEPA) and Section 106 of the National Historic Preservation Act (NHPA); the California Public Utilities Commission (CPUC) is the lead state agency for compliance with the California Environmental Quality Act (CEQA). We have previously provided official notification regarding the proposed project and invited the Cocopah Indian Tribe to consult in a government-to-government manner in a letter dated May 20, 2014. The purpose of this letter is to provide an update on our efforts to identify historic properties that may be affected by the undertaking and to notify you of archaeological site testing that will be conducted to support this effort. The BLM would also like to reiterate our invitation and request to engage in government-to-government consultation with your Tribe on this project.

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Chairman Dennis Patch, Sr.
Colorado River Indian Tribes
26600 Mohave Road
Parker, AZ 85344

Dear Chairman Patch:

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Chairman Timothy Williams
Fort Mojave Indian Tribe
500 Merriman Avenue
Needles, CA 92363

Dear Chairman Williams:

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President Keeny Escalanti, Sr.
Fort Yuma Quechan Tribe
350 Picachu Road
Yuma, AZ 85366-1899

Dear President Escalanti:

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Chairman Robert Martin
Morongo Band of Mission Indians
12700 Pumarra Rd.
Banning, CA 92220

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Chairman Joseph Hamilton
Ramona Band of Mission Indians
56310 Highway 371-Suite B
Anza, CA 92539

Dear Chairman Hamilton:

The Bureau of Land Management (BLM) is continuing consultation on Southern California Edison's (SCE) proposed West of Devers (WOD) Upgrade Project. The proposed Project crosses lands managed by the BLM, lands in private ownership, as well as portions of the Morongo Band of Mission Indians Tribal Reservation. The BLM is the Federal lead agency for compliance with the National Environmental Policy Act (NEPA) and Section 106 of the National Historic Preservation Act (NHPA); the California Public Utilities Commission (CPUC) is the lead state agency for compliance with the California Environmental Quality Act (CEQA). We have previously provided official notification regarding the proposed project and invited the Ramona Band of Mission Indians to consult in a government-to-government manner in a letter dated May 20, 2014. The purpose of this letter is to provide an update on our efforts to identify historic properties that may be affected by the undertaking and to notify you of archaeological site testing that will be conducted to support this effort. The BLM would also like to reiterate our invitation and request to engage in government-to-government consultation with your Tribe on this project.

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Based on the results of the Class III surveys, the BLM and CPUC have determined that additional information is required to evaluate seven archaeological resources for their eligibility for listing in the National Register of Historic Places (NRHP) and the California Register of Historic Resources (CRHR). Six archaeological sites (CA-RIV-11411, CA-RIV-11417, CA-RIV-11419, CA-RIV-11426, CA-SBR-11624H, and P-36-24295) require additional archival research in order to be evaluated under Criteria A/1 and B/2 for their association with significant events or persons in history. One archaeological site (CA-SBR-2311H) will require archaeological testing in order to be evaluated under Criterion D/4 for its information potential. A testing plan has been developed to guide the additional research efforts (enclosure 2). The archival research is currently underway and the fieldwork is currently being

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If you would like to designate a representative to consult with the BLM, have any information regarding places of religious or cultural significance that may be affected by the proposed project, or have any questions or concerns about the proposed Project, please contact Frank McMenimen, Project Manager, by telephone at (760) 833-7150, or by email at fmcmenimen@blm.gov, or Tiffany Thomas, Renewable Energy Archaeologist, by telephone at (951) 697-5365, or by email at tathomas@blm.gov.

We look forward to hearing from you regarding your interest in the West of Devers Upgrade Project and our invitation to continue government-to-government consultation. If you would like to schedule a government-to-government consultation meeting please do not hesitate to contact me. I can be reached by telephone at (760) 326-7000 or by e-mail at twakefie@blm.gov.

Sincerely,

Timothy J. Wakefield
Acting Field Manager

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In Reply Refer To:
CACA-063162
2831-03 (P)
CAD000.06/CAD060

AUG 22 2014

Chairwoman Lynn Valbuena
San Manuel Band of Mission Indians
26569 Community Center Drive
Highland, CA 92346

Dear Chairwoman Valbuena:

The Bureau of Land Management (BLM) is continuing consultation on Southern California Edison's (SCE) proposed West of Devers (WOD) Upgrade Project. The proposed Project crosses lands managed by the BLM, lands in private ownership, as well as portions of the Morongo Band of Mission Indians Tribal Reservation. The BLM is the Federal lead agency for compliance with the National Environmental Policy Act (NEPA) and Section 106 of the National Historic Preservation Act (NHPA); the California Public Utilities Commission (CPUC) is the lead state agency for compliance with the California Environmental Quality Act (CEQA). We have previously provided official notification regarding the proposed project and invited the San Manuel Band of Mission Indians to consult in a government-to-government manner in a letter dated May 20, 2014. The purpose of this letter is to provide an update on our efforts to identify historic properties that may be affected by the undertaking and to notify you of archaeological site testing that will be conducted to support this effort. The BLM would also like to reiterate our invitation and request to engage in government-to-government consultation with your Tribe on this project.

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In Reply Refer To:
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AUG 22 2014

Chairwoman Rosemary Morillo
Soboba Band of Luiseno Indians
23904 Soboba Road
San Jacinto, CA 92583

Dear Chairwoman Morillo:

The Bureau of Land Management (BLM) is continuing consultation on Southern California Edison's (SCE) proposed West of Devers (WOD) Upgrade Project. The proposed Project crosses lands managed by the BLM, lands in private ownership, as well as portions of the Morongo Band of Mission Indians Tribal Reservation. The BLM is the Federal lead agency for compliance with the National Environmental Policy Act (NEPA) and Section 106 of the National Historic Preservation Act (NHPA); the California Public Utilities Commission (CPUC) is the lead state agency for compliance with the California Environmental Quality Act (CEQA). We have previously provided official notification regarding the proposed project and invited the Soboba Band of Luiseno Indians to consult in a government-to-government manner in a letter dated May 20, 2014. The purpose of this letter is to provide an update on our efforts to identify historic properties that may be affected by the undertaking and to notify you of archaeological site testing that will be conducted to support this effort. The BLM would also like to reiterate our invitation and request to engage in government-to-government consultation with your Tribe on this project.

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AUG 28 2014

Chairwoman Mary Resvaloso
Torres-Martinez Desert Cahuilla Indians
66725 Martinez Road
Thermal, CA 92274

Dear Chairwoman Resvaloso:

The Bureau of Land Management (BLM) is continuing consultation on Southern California Edison's (SCE) proposed West of Devers (WOD) Upgrade Project. The proposed Project crosses lands managed by the BLM, lands in private ownership, as well as portions of the Morongo Band of Mission Indians Tribal Reservation. The BLM is the Federal lead agency for compliance with the National Environmental Policy Act (NEPA) and Section 106 of the National Historic Preservation Act (NHPA); the California Public Utilities Commission (CPUC) is the lead state agency for compliance with the California Environmental Quality Act (CEQA). We have previously provided official notification regarding the proposed project and invited the Torres-Martinez Desert Cahuilla Indians to consult in a government-to-government manner in a letter dated May 20, 2014. The purpose of this letter is to provide an update on our efforts to identify historic properties that may be affected by the undertaking and to notify you of archaeological site testing that will be conducted to support this effort. The BLM would also like to reiterate our invitation and request to engage in government-to-government consultation with your Tribe on this project.

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AUG 22 2014

Chairman Darrell Mike
Twenty-nine Palms Band of Mission Indians
46-200 Harrison Place
Coachella, CA 92236

Dear Chairman Mike:

The Bureau of Land Management (BLM) is continuing consultation on Southern California Edison's (SCE) proposed West of Devers (WOD) Upgrade Project. The proposed Project crosses lands managed by the BLM, lands in private ownership, as well as portions of the Morongo Band of Mission Indians Tribal Reservation. The BLM is the Federal lead agency for compliance with the National Environmental Policy Act (NEPA) and Section 106 of the National Historic Preservation Act (NHPA); the California Public Utilities Commission (CPUC) is the lead state agency for compliance with the California Environmental Quality Act (CEQA). We have previously provided official notification regarding the proposed project and invited the Twenty-nine Palms Band of Mission Indians to consult in a government-to-government manner in a letter dated May 20, 2014. The purpose of this letter is to provide an update on our efforts to identify historic properties that may be affected by the undertaking and to notify you of archaeological site testing that will be conducted to support this effort. The BLM would also like to reiterate our invitation and request to engage in government-to-government consultation with your Tribe on this project.

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Appendix 9. Policy
Screening Report

Appendix 9

Policy Screening Report

1. Introduction and Purpose

This Policy Screening Report provides a preliminary or screening evaluation of federal, State, and local policies applicable to the Proposed Project and alternatives and whether the project would be consistent with these policies. This analysis serves as a tool for focusing the technical sections of the Environmental Impact Report/Environmental Impact Statement (EIR/EIS) on relevant policies of concern to jurisdictions. Plans applicable to the jurisdictions though which the project would pass were reviewed. The policies associated with these plans are evaluated in this report.

The policies are organized by plan and then by environmental discipline (e.g., resource topic). Some of the policies have been summarized or abbreviated to make this document easier to read.

1.1 CEQA/NEPA Requirements

The California Environmental Quality Act (CEQA) does not specifically require that a policy analysis be completed for a project. The only mention of policy analysis is in the CEQA Checklist, Appendix G, which includes under the land use and planning portion of the checklist the following:

> *Would the project conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?*

While an Applicant for construction of a transmission project is required to obtain local ministerial permits, such as grading permits and road encroachment permits, investor-owned utility transmission projects are under sole the jurisdiction of the CPUC and are exempt from local approval. However, as a matter of practice, CPUC considers local plans and policies when making decisions and imposing conditions on projects.

The National Environmental Policy Act (NEPA) applies to federal decisions. Unlike CEQA, NEPA does address policy analysis. 40 CFR 1502.16 states the environmental consequences portion of an environmental analysis shall include discussion of:

> *(c) Possible conflicts between the proposed action and the objectives of Federal, regional, State, and local (and in the case of a reservation, Indian tribe) land use plans, policies and controls for the area concerned.*

Additionally, 40 CFR 1506.2 addresses elimination of duplication with state and local procedures, and states:

> *(d) To better integrate environmental impact statements into state or local planning processes, statements shall discuss any inconsistency of a proposed action with any approved State or local plan and laws (whether or not federally sanctioned). Where an inconsistency exists, the statement should describe the extent to which the agency would reconcile its proposed action with the plan or law.*

However, decision-makers retain the authority to go forward with a project despite the potential conflict (CEQ 40 FAQ Response 23c).[1] In addition, the Record of Decision under NEPA must explain how the decision was made and what mitigation measures are being imposed to reduce impacts (CEQ, 40 FAQs, Response 23c).[2]

To assist with the requirement for a policy analysis, this screening report documents policies considered in preparation of the EIR/EIS, and determines whether the project is consistent with the policy. The intent of this review is to focus the EIR/EIS impact analysis on those concerns identified in policy statements that are directly relevant to the Proposed Project and/or alternatives.

1.2 Screening Methodology

The Policy Screening Report summarizes each applicable federal, State, and local agency plan. As part of this summary, applicable policies are identified and categorized by environmental discipline. Each policy is assessed to determine its relevance to the Proposed Project and alternatives and whether the project would be consistent with the policy. For purposes of this screening effort, relevant policies or standards relate to the Proposed Project's compatibility with the intent of specific policies. In many cases, policies are stated as general objectives and are open to interpretation as to whether a particular action would be consistent with the policy.

Sections 2 through 4 below discuss policies from federal, state, and local plans or program for those jurisdictions that would be traversed by the Proposed Project and the alternatives.

2. Federal Plans and Documents

2.1 U.S. Bureau of Land Management (BLM) California Desert Conservation Area (CDCA) Plan, 1980 as Amended

The 25-million-acre CDCA contains over 12 million acres of public lands spread across the California Desert, which includes the Mojave and the Sonoran deserts and a small portion of the Great Basin. Segment 6, an eight-mile length of the Proposed Project, is within the western boundary of the CDCA, between Morongo reservation land and Devers Substation. In this segment, approximately one mile of the transmission corridor would be on BLM land. The BLM land through which the transmission line would pass is not covered by a specific multiple-use classification under the CDCA. The southern edge of the Whitewater Canyon Area of Critical Environmental Concern (ACEC), which includes arroyo toad critical habitat along the Whitewater River, is approximately 0.3 miles north of where the alignment crosses Whitewater Canyon. The Whitewater Canyon Grazing Allotment also occurs north of the project alignment, and the alignment passes through an area of burro range. In Segment 6 the Proposed Project would include upgrading the existing 220 kV line and towers.

The purpose of the CDCA Plan is to guide development of public lands, and resources, including economic, educational, scientific, and recreational uses, in a manner that enhances wherever possible — and that does not diminish, on balance — the environmental, cultural, and aesthetic values of the desert and its productivity. This is to be achieved in the Plan through the direction given for management actions and resolution of conflicts

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[1] Reference refers to "Memorandum: Forty Most Asked Questions Concerning CEQs (Council of Environmental Quality) NEPA Regulations (40 Questions)."

[2] Other federal regulations address streamlining EISs including 40 CFR 1502.15 (Affected Environment) and 40CFR 1502.21 (Incorporation by Reference).

California Desert Conservation Area (CDCA) Plan, 1980 as Amended		
Applicable Policies	**Determination**	**Consistent?**
BIOLOGICAL RESOURCES		
Wildlife Element, Pages 28-30		
Goals 1–5: The Wildlife Element includes five goals that direct the BLM to mitigate for impacts, develop and implement detailed plans, manage wildlife habitats, and to consider crucial habitats in all decisions.	The Wildlife Element goals require programmatic actions that are the responsibility of the BLM, but the results of these programmatic actions will be considered in the BLM's evaluation of the ROW grant.	YES
Policy 1: The protection afforded federally and State-listed species will remain the same for all multiple-use classes. Any federal action which may impact either the habitat or individuals of federally listed species must be put into formal consultation with the U.S. Fish and Wildlife Service (FWS). Species officially proposed for listing, which may be impacted through the federal action, may be dealt with through conference with the FWS.	The Proposed Project is not within a multiple-use classification. However, the project requires formal consultation with the USFWS, which the BLM performs as part of the review process. The results of the consultation are presented in this EIR/EIS. Therefore, the Proposed Project would be consistent with this policy.	YES
Policy 2: Discovery of previously unknown but significant wildlife values may serve as the basis for initiating the amendment of a multiple-use class designation. Designation of "Critical Habitat" for a federally listed species may necessitate a change in multiple-use class designation.	The Proposed Project would be in a designated utility corridor, which was studied when the existing transmission line was permitted. As such, there is a low possibility that studies associated with the Proposed Project would discover significant wildlife values.	YES
Policy 3: Protective provisions, stipulations, or objectives for wildlife will be considered in all permits, licenses, activity plans, etc., to avoid or minimize habitat deterioration.	Permits, licenses and activity plans would be considered to avoid or minimize habitat deterioration. T	YES
Vegetation Element, Pages 37-38		
Goal 1: Maintain the productivity of the vegetative resource while meeting the consumptive needs of wildlife, livestock, wild horses and burrows, and man. Provide for such uses under the principles of sustained yield.	The Proposed Project would not change the productivity of vegetative resources. The Proposed Project would be placed in an existing corridor where once in operation the corridor would continue to serve as open space area.	YES
Goal 2: Manage those plant species on the federal and State lists of threatened and endangered species and their habitats so that the continued existence of each is not jeopardized. Stabilize and, where possible, improve populations through management and recovery plans developed and implemented cooperatively with the U.S. Fish and Wildlife Service and the California Department of Fish and Game [now Wildlife].	The loss of habitat due to the Proposed Project would require mitigation to manage those plant species federally and State listed.	YES
Goal 3: Manage those plant species officially designated as sensitive by the BLM for California and their habitats so that the potential for federal or State listing is minimized. Include consideration of sensitive species habitats in all decisions such that impacts are avoided, mitigated, or compensated.	Plant species officially designated as sensitive by the BLM and their habitats may be affected by the Proposed Project. Appropriate protective measures and mitigation measures would be required.	YES
Goal 4: Manage unusual plant assemblages (UPAs) so that their continued existence is maintained. In all actions, include consideration of UPAs so that impacts are avoided, mitigated or compensated.	UPAs would not be affected by the Proposed Project.	YES

California Desert Conservation Area (CDCA) Plan, 1980 as Amended

Applicable Policies	Determination	Consistent?
Goal 5: Manage wetland and riparian areas in the CDCA, with the following specific objectives; (a) To avoid the long-term and short-term impacts associated with the destruction, loss, or degradation of wetland and riparian areas; (b) To preserve and enhance the natural and beneficial values of wetland and riparian areas which may include constraining or excluding those uses that cause significant long-term ecological damage; (c) To include practical measures to minimize harm in all actions causing adverse impacts on wetlands and riparian areas; and (d) To retain all wetlands and riparian habitats presently under BLM administration wherever high resource values exist and adverse impacts cannot be mitigated.	This policy requires the management of wetland and riparian areas in the CDCA. This policy will not be evaluated further because the Proposed Project would not cross any riparian drainage on BLM land.	YES
VISUAL RESOURCES		
Visual Resources Management Program, Page 71		
(1) The appropriate levels of management, protection, and rehabilitation on all public lands in the CDCA will be identified, commensurate with visual resource management objectives in the multiple-use class guidelines. (2) Proposed activities will be evaluated to determine the extent of change created in any given landscape and to specify appropriate design or mitigation measures using the Bureau's contrast rating process. *(Based on their general characteristics, BLM-managed lands in the Coachella Valley have been assigned VRM classes I through IV. Segment 6 of the Proposed Project is located within a portion of the Coachella Valley Planning Area southwest of Desert Hot Springs and northwest of Palm Springs. Segment 6 crosses a small portion of BLM-managed land (less than one mile), which is designated VRM Class II, with a smaller adjacent area designated as VRM Class IV).* *The VRM Class II Management Objective requires that a project or action retain the existing character of the landscape. The level of change to the landscape should be low. Activities may be seen but should not attract attention of the casual observer. Changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape).*	Segment 6 crosses a small portion of BLM land, which is designated VRM Class II, with a smaller adjacent area designated as VRM Class IV. This policy is addressed further in the EIR/EIS. While the Proposed Project would have a low level of visual change and would: (a) repeat the characteristics of the existing three lattice tower transmission lines that it would replace; (b) improve the characteristics of this portion of the ROW by reducing the ROW's structural complexity, industrial character, and associated visual contrast; and (c) introduce replacement structures that would not dominate the view of, nor attract the attention of, the casual observer. Also, it would not repeat the basic elements of the existing natural features in the landscape, as required by the VRM Class II Management Objective. However, this inconsistency is not considered substantial given the structural context that is already established with the existing multi-facility transmission line corridor and the adjacent wind energy facilities (wind turbines) through which much of this route segment passes.	NO
LAND USE		
7. Transmission Facilities, Table 1: Multiple-Use Class Guidelines, Page 15		
New gas, electric, and water transmission facilities and cables for interstate communication may be allowed only within designated corridors.	The project crosses land having no specific multiple-use classification. It is an existing line that would be upgraded, located in and existing transmission corridor.	YES

California Desert Conservation Area (CDCA) Plan, 1980 as Amended		
Applicable Policies	**Determination**	**Consistent?**
WILDERNESS AND RECREATION		
15. Recreation, Table 1: Multiple-Use Class Guidelines, Pages 19-20		
Class C – This class is suitable for nonmechanical types of recreational experience which generally involve low to very low user densities. Class L – This class is suitable for recreation which generally involves low to moderate user densities. Class M – This class is suitable for a wide range of recreation activities which may involve moderate to high user densities. Class I – This class is suitable for recreation activities which generally involve high user densities.	The Proposed Project would be constructed within an existing utility corridor that has been designated for public facility or open space use. As such, the Proposed Project would not conflict with recreational use designations.	YES
Motorized-Vehicle Access Element, Goals, Page 75		
Provide for constrained motorized vehicle access in a manner that balances the needs of all desert users, private landowners and other public agencies.	The Proposed Project would be constructed within an existing utility corridor that has been designated for public facility or open space use. As such, the Proposed Project would not conflict with recreational use designations.	YES
Use maps, signs and published information to communicate the motorized vehicle access situation to desert users. Be sure all information materials are understandable and easy to follow.	The Proposed Project would be constructed within an existing utility corridor that has been designated for public facility or open space use. As such, the Proposed Project would not conflict with recreational use designations.	YES
CULTURAL & PALEONTOLOGICAL RESOURCES		
Cultural Resources		
The Programmatic Memorandum of Agreement (MOA) covering the implementation of the Desert Plan among the Bureau of Land Management, the California State Historic Preservation Officer, and the National Advisory Council on Historic Preservation outlines the implementation of the Cultural Resource Element.	This policy consists of a MOA that includes programmatic policies that are the responsibility of the agencies and would not be applied to the Proposed Project.	YES
Record of Decision for California Desert Conservation Area Plan Amendment for the Coachella Valley, December 27, 2002 – Cultural Resources – Page 5		
Cultural Resources: All management actions shall comply with the National Historic Preservation Act of 1966, which provides for the protection of significant cultural resources. In furtherance of this Act, the 36 Code of Federal Regulations 800 procedures shall be conducted pursuant to the State Protocol Agreement (1998) between the BLM and the California State Historic Preservation Officer. An appropriate level of inventory shall be conducted for all actions with a potential to affect cultural resources.	The requirements of this policy would be satisfied by compliance with the NHPA Section 106 and CEQA processes. These may include inventory, evaluation, avoidance, mitigation, and/or monitoring.	YES
Native American Concerns: For all public land activities adjacent to reservation lands, the BLM shall consult with the relevant tribes to determine potential impact to Native American trust assets and cultural values and to develop mitigation measures as needed.	The requirements of this policy would be satisfied by compliance with the NHPA Section 106 and CEQA processes. These may include inventory, Native American consultation, evaluation, avoidance, mitigation, and/or monitoring.	YES
TRANSPORTATION AND TRAFFIC		
Policy 1: Provide for constrained motorized vehicle access in a manner that balances the needs of all desert users, private landowners and other public agencies.	The Proposed Project would not provide additional long-term access over existing conditions in the Plan area.	YES

California Desert Conservation Area (CDCA) Plan, 1980 as Amended

Applicable Policies	Determination	Consistent?
GEOLOGY, MINERAL RESOURCES, AND SOILS		
Goals 1 and 2: Assure the availability of known mineral resource lands for exploration and development, and encourage the development of mineral resources in an environmentally sound manner.	The Proposed Project would not restrict access to or availability of minerals, and would not impact mining operations on federal lands. Thus, the Proposed Project would be consistent with this policy.	YES

2.2 Coachella Valley Multiple Species Habitat Conservation Plan and Natural Community Conservation Plan, 2008

The Coachella Valley Multiple Species Habitat Conservation Plan (MSHCP) is a comprehensive, multi-jurisdictional plan focusing on the conservation of federal and State-listed species, other rare and sensitive species, and their habitats. Segment 6 of the Proposed Project is within the Coachella Valley MSHCP area and passes through portions of four Conservation Areas designated under the Plan: Cabazon; Stubbe and Cottonwood Canyons; Upper Mission Creek/Big Morongo Canyon; and Whitewater Canyon.

The MSHCP balances environmental protection and economic development objectives in the plan area and simplifies compliance with endangered species related laws. The MSHCP satisfies the legal requirements for the issuance of state and federal permits that will allow the take of species covered by the plan in the course of otherwise lawful activities. To the maximum extent practicable, the plan provides measures to minimize and mitigate the impacts of the taking and provides for conservation of Covered Species. The MSHCP is regulated by the Coachella Valley Association of Governments in cooperation and coordination with the U.S. Fish and Wildlife Service (USFWS).

The Proposed Project element within the MSHCP area would include the upgrade of the existing 220 kV transmission conductors and structures.

Coachella Valley Multiple Species Habitat Conservation Plan and Natural Community Conservation Plan, 2008 (being amended in 2015 to include Desert Hot Springs)

Applicable Policies	Determination	Analyzed Further
BIOLOGICAL RESOURCES		
Section 4.3 Conservation Areas, Pages 4-20 through 4-192.		
The Cabazon Conservation Area consists of the San Gorgonio River and several tributaries in the westernmost part of the Plan Area, and portions of the San Jacinto Mountains and the San Bernardino Mountains, which function as a sand source area. The Conservation Area contains Essential Habitat for Peninsular bighorn sheep, mesquite hummocks, southern sycamore–alder riparian woodland, sand source areas, fluvial sand transport areas, and the Fornat Wash Biological Corridor.	The biological assessment considered the information for this conservation area and incorporated data and measures as appropriate.	YES
The desert tortoise population in the Stubbe and Cottonwood Canyons Conservation Area centers on the mesas to the west of the Whitewater River. The Stubbe Canyon and Cottonwood Canyon also contains suitable migration and breeding Habitat for least Bell's vireo, southwestern willow flycatcher, summer tanager, yellow-breasted chat, and yellow warbler. Other Conserved Habitat and Natural Communities	The biological assessment considered the information for this conservation area and incorporated data and measures as appropriate.	YES

Coachella Valley Multiple Species Habitat Conservation Plan and Natural Community Conservation Plan, 2008 (being amended in 2015 to include Desert Hot Springs)

Applicable Policies	Determination	Analyzed Further
The Whitewater Canyon Conservation Area contains historic Habitat for the arroyo toad, riparian birds, and some habitat for the desert tortoise and triple-ribbed milk-vetch. Natural community such as Sonoran cottonwood-willow riparian forest, desert palm woodlands, sand source, fluvial sand transport areas, and biological corridors are conserved in Whitewater Canyon.	The biological assessment considered the information for this conservation area and incorporated data and measures as appropriate.	YES
The Upper Mission Creek/Big Morongo Canyon Conservation Area encompasses the Mission Creek and Big Morongo Canyon watersheds and the portions of the Mission Creek flood control channel and Morongo Wash within the City of Desert Hot Springs. This Conservation Area includes sand source and the upper of the fluvial sand transport system that provides blowsand to the Willow Hole Preserve. Two bridges on Highway 62 provide movement corridors under highway that provide habitat connectivity for wildlife.	The biological assessment considered the information for this conservation area and incorporated data and measures as appropriate.	YES
LAND USE		
Chapter 4.5: Land Use Adjacency Guidelines, 4.5.6 Barriers, Page 4-200		
Land uses adjacent to or within a Conservation Area shall incorporate barriers in individual project designs to minimize unauthorized public access, domestic animal predation, illegal trespass, or dumping in a Conservation Area. Such barriers may include native landscaping, rocks/boulders, fencing, walls and/or signage.	The Proposed Project would be located within a Conservation Area. Measures to comply with this land use policy will be evaluated further in the land use section of the report.	YES
NOISE		
Establishment of the MSHCP Reserve System, Land Use Adjacency Guidelines, 4.5.4 Noise, Page 4-196		
Land uses adjacent to or within a Conservation Area that generate noise above 105 dBA hourly shall incorporate setbacks, berms, or walls to minimize the effects of noise on the Conservation Area resources.	The Proposed Project could generate noise above 105 dBA. This policy will be evaluated further in the EIR/EIS.	YES

2.3 Western Riverside Multi-Species Habitat Conservation Plan, 2003

The Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) is a comprehensive, multi-jurisdictional Habitat Conservation Plan (HCP) focusing on Conservation of species and their associated Habitats in Western Riverside County. The MSHCP Plan Area encompasses approximately 1.26 million acres (1,966 square miles); it includes all unincorporated Riverside County land west of the crest of the San Jacinto Mountains to the Orange County line, as well as the jurisdictional areas of the Cities of Temecula, Murrieta, Lake Elsinore, Canyon Lake, Norco, Corona, Riverside, Moreno Valley, Banning, Beaumont, Calimesa, Perris, Hemet, and San Jacinto.

The overall goal of the Western Riverside MSHCP is to enhance and maintain biological diversity and ecosystem processes while allowing future economic growth. This includes preserving a quality of life characterized by well-managed and well-planned growth integrated with an associated open-space system. The MSHCP has an MSHCP Conservation Area in excess of 500,000 acres and focuses on Conservation of 146 species. The MSHCP Conservation Area includes approximately 347,000 acres on existing Public/Quasi-Public Lands and approximately 153,000 acres of Additional Reserve Land. The overall goals of the MSHCP are:

- Biological Goal: In the MSHCP Plan Area, Conserve Covered Species and their Habitats.
- Economic Goal: Improve the future economic development in the County by providing an efficient, streamlined regulatory process through which Development can proceed in an efficient way. The MSHCP and the General Plan will provide the County with a clearly articulated blueprint describing where future Development should and should not occur.
- Social Goal: Provide for permanent open space, community edges, and recreational opportunities, which contribute to maintaining the community character of Western Riverside County.

The policies of the MSHCP are addressed through the local plans under Riverside County and its incorporated cities in Section 4 below.

3. State Plans and Policies

3.1 Caltrans – Scenic Highways Guidelines

The Scenic Highway Program was created to preserve and protect scenic highway corridors from changes that would diminish the aesthetic value of lands adjacent to highways. The State Scenic Highway System includes highways that are either eligible for designation as scenic highways or have been designated as such. Streets and Highways Code Section 260-263 defines California's scenic highways

No highways designated or eligible to be designated Scenic Highways are crossed by the Proposed Project in San Bernardino County. In Riverside County Highway 62 and Highway 243 are designated Scenic Highways. Highway 62 would be crossed by the Proposed Project's 220 kV transmission line upgrades approximately 1 mile west of Devers Substation. Highway 243 would be crossed by a fiber optic ground wire between Banning Substation and a connection with the Devers-Valley transmission line. While the Proposed Project would be visible from these highways, it would be located within an existing utility corridor. The Proposed Project would repeat the characteristics of the existing three lattice tower transmission lines that it would replace and would improve the characteristics of the portions of the ROW visible from the Designated and Eligible scenic highways identified above by reducing the ROW's structural complexity, industrial character, and associated visual contrast. Also, the new structures would not dominate the view of, nor attract the attention of, the casual observer relative to the existing infrastructure. Therefore, the Proposed Project would be consistent with this program.

The State Legislature established the California Scenic Highway Program in 1963. Subsequently, Caltrans established criteria for designating a roadway as a Scenic Highway. Responsibility for the development of scenic highways rests with local jurisdictions. After it is determined the proposed scenic highway satisfies the Caltrans criteria, the local jurisdiction must adopt a program to protect the scenic corridor. In the case of Highway 62, the Riverside County General Plan would be the local program applicable to the scenic highway..

The Public Utilities Code (Division 1, Part 1, Chapter 2, 320) addresses the undergrounding of utilities in proximity to any highway designated a state scenic highway. This part of the Code declares that it is State policy to "achieve, wherever feasible and not inconsistent with sound environmental planning, the undergrounding of all future electric and communication distribution facilities which are proposed to be erected in proximity to any highway designated a state scenic highway..." The 220 kV element of the Proposed Project is a transmission facility and not a distribution facility. Therefore, this section of the Code does not apply to that line. The fiber optic cable that would cross Highway 243 near Wesley Street would be on existing poles supporting existing distribution and communications lines.

4. Local Plans and Policies

4.1 San Bernardino County, California

San Bernardino County General Plan, 2007 as amended. The county lies within the Riverside–San Bernardino metro area and contains over 30 incorporated cities, towns, and communities. It extends from central southern California to the Arizona border, covering 20,160 square miles. Approximately 90 percent of the county's area is desert; the remainder consists of the San Bernardino Valley and the San Bernardino Mountains. In San Bernardino County, the Proposed Project would include the upgrading of an existing SCE 220 kV transmission line, improvements to the San Bernardino and Vista Substations, relocation of 66 kV and 12 kV lines, and installation of fiber optic communications lines. Most of the project would be in incorporated cities. The 220 kV ROW would pass through a small area of unincorporated land within Colton and 2 miles of unincorporated land south of Loma Linda.

The General Plan is the fundamental policy document for the unincorporated, privately owned county lands. It is a comprehensive document that must address seven mandatory elements or issue topics. Those elements are Land Use, Housing, Circulation, Conservation, Open Space, Noise and Safety. The Proposed Project is to upgrade and existing transmission line in an existing ROW; many of the Goals and Policies of the General Plan do not apply.

San Bernardino County General Plan, 2007 as amended

Applicable Policies	Determination	Consistent?
CIRCULATION AND INFRASTRUCTURE ELEMENT		
5. Fire Protection, Page III-45		
GOAL CI 16. The County will protect its residents and visitors from injury and loss of life and protect property from fires through the continued improvement of existing Fire Department facilities and the creation of new facilities, but also through the improvement of related infrastructure that is necessary for the provision of fire service delivery such as water systems and transportation networks.	The County, in coordination with CALFIRE and local cities, has responsibility for ensuring adequate fire protection in areas under its jurisdiction, including adequate facilities. The Proposed Project would not create conditions that would increase fire risk nor diminish the ability of the County to respond to a fire.	YES
7. Natural Gas and Electricity, Page III-47		
GOAL CI 18. The County will ensure efficient and cost effective utilities that serve the existing and future needs of people in the unincorporated areas are provided.	The Proposed Project would increase reliability of the electrical system in the County.	YES

San Bernardino County General Plan, 2007 as amended

Applicable Policies	Determination	Consistent?
CONSERVATION ELEMENT		
1. Biological Resources, Page V-15		
GOAL CO 2. The County will maintain and enhance biological diversity and healthy ecosystems throughout the County. POLICIES: CO 2.1 The County will coordinate with state and federal agencies and departments to ensure that their programs to preserve rare and endangered species and protect areas of special habitat value, as well as conserve populations and habitats of commonly occurring species, are reflected in reviews and approvals of development programs. CO 2.4 All discretionary approvals requiring mitigation measures for impacts to biological resources will include the condition that the mitigation measures be monitored and modified, if necessary, unless a finding is made that such monitoring is not feasible.	A portion of the Proposed Project will be constructed in open space areas in the County and habitat for listed and candidate species may be affected. Because the County's Goal and Policies require preservation and protection of resources, mitigation measures are required. These have been included in the EIR/EIS	YES
2. Cultural Resources, Page V-18		
GOAL CO 3. The County will preserve and promote its historic and prehistoric cultural heritage. POLICIES CO 3.1 Identify and protect important archaeological and historic cultural resources in areas of the County that have been determined to have known cultural resource sensitivity. CO 3.2 Identify and protect important archaeological and historic cultural resources in all lands that involves disturbance of previously undisturbed ground. CO 3.3 Establish programs to preserve the information and heritage value of cultural and historical resources. CO 3.4 The County will comply with Government Code Section 65352.2 (SB 18) by consulting with tribes as identified by the California Native American Heritage Commission on all General Plan and specific plan actions. CO 3.5 Ensure that important cultural resources are avoided or minimized to protect Native American beliefs and traditions.	As identified in the Cultural Resources sections of the EIR/EIS, pre-construction surveys for undiscovered cultural resources will be required. Any resources discovered will be appropriately documented and recorded. The project will comply with State and federal laws and requirements with regard to cultural resources and Native American consultation. Therefore, the Proposed Project would be consistent with this goal and these policies.	YES
3. Air Quality, Page V-23		
GOAL CO 4. The County will ensure good air quality for its residents, businesses, and visitors to reduce impacts on human health and the economy.	The Proposed Project would be required to be in compliance with mitigation measures to minimize ground disturbance, control dust, and use State-approved equipment designed to minimize air pollutants and reduce energy consumption. Therefore, the project would be consistent with this County Goal.	YES

San Bernardino County General Plan, 2007 as amended		
Applicable Policies	**Determination**	**Consistent?**
4, Water, Page V-27		
GOAL CO 5. The County will protect and preserve water resources for the maintenance, enhancement, and restoration of environmental resources. POLICIES CO 5.3 The County will promote conservation of water and maximize the use of existing water resources by promoting activities/measures that facilitate the reclamation and reuse of water and wastewater. CO 5.4 Drainage courses will be kept in their natural condition to the greatest extent feasible to retain habitat, allow some recharge of groundwater basins and resultant savings. The feasibility of retaining features of existing drainage courses will be determined by evaluating the engineering feasibility and overall costs of the improvements to the drainage courses balanced with the extent of the retention of existing habitat and recharge potential.	Project components in San Bernardino County would not be located in water courses or drainages and will not pave potential recharge areas. To the extent available, reclaimed water would be used for dust control. Otherwise, water would come from an approved municipal source. Therefore, the project would be consistent with this Goal and these Policies.	YES
5. Soils/Agriculture, Page V-30		
GOAL CO 6. The County will balance the productivity and conservation of soil resources. POLICIES CO 6.1 Protect prime agricultural lands from the adverse effects of urban encroachment, particularly increased erosion and sedimentation, trespass, and non-agricultural land development.	The 220 kV ROW passes through a small area of prime agricultural land on Reche Road. The Proposed Project would not alter existing use of the land or increase the project footprint at this location. Therefore, the project would be consistent with this policy.	NO
6. Minerals, Page V-32		
GOAL CO 7. The County will protect the current and future extraction of mineral resources that are important to the County's economy while minimizing impacts of this use on the public and the environment.	The Proposed Project would not include any areas of current or future mineral resource extraction in the County. If resources were discovered and extracted, excavation could occur under the transmission line. The project would be consistent with this Goal.	YES
7. Energy, Page V-34		
GOAL CO 8. The County will minimize energy consumption and promote safe energy extraction, uses and systems to benefit local regional and global environmental goals. POLICIES CO 8.1 – Maximize the beneficial effects and minimize the adverse effects associated with the siting of major energy facilities... Energy planning should...minimize environmental impacts... in...locating energy facilities. CO 8.2 Conserve energy and minimize peak load demands through the efficient production, distribution and use of energy. GOAL CO 10. The General Plan will anticipate and accommodate future electric facility planning and will enable information sharing to improve electric load forecasting.	The Proposed Project would upgrade transmission from Devers Substation into San Bernardino County. This would allow for additional delivery of renewable wind and solar energy from the desert region of Riverside County. The Project would be located within an existing utility corridor, and the structures would be similar to the design of some of the existing structures within the corridor. Also, by removing three transmission lines of different design and replacing them with two transmission lines of the same design (in San Timoteo Canyon), the Proposed Project would improve the visual characteristics of the ROW visible from San Timoteo Canyon Road by reducing the ROW's structural complexity, industrial character, and associated visual contrast. Therefore, the Proposed Project would be consistent with this policy.	YES

San Bernardino County General Plan, 2007 as amended

Applicable Policies	Determination	Consistent?
OPEN SPACE ELEMENT		
GOAL OS 1. The County will provide plentiful open spaces, local parks, and a wide variety of recreational amenities for all residents. GOAL OS 2. The County will expand its trail systems for pedestrians, equestrians, and bicyclists to connect with the local, state, and federal trail systems.	During construction trails and access roads used by the Applicant to reach tower sites may be temporarily closed. Once construction is complete, those roads and trails open to the public would remain available. The project would not result in any permanent closures. Therefore, the project would be consistent with these Goals.	YES
GOAL OS 5. The County will maintain and enhance the visual character of scenic routes in the County. Policy OS 5.2 – Define the scenic corridor on either side of the designated route, measured from the outside edge of the right-of-way, trail, or path. Development along scenic corridors will be required to demonstrate through visual analysis that proposed improvements are compatible with the scenic qualities present. Policy OS 5.3 – The County desires to retain the scenic character of visually important roadways throughout the County. A "scenic route" is a roadway that has scenic vistas and other scenic and aesthetic qualities that over time have been found to add beauty to the County. Therefore, the County designates the following routes as scenic highways and applies all applicable policies to development on these routes GOAL OS 6. Improve and preserve open space corridors throughout the County. GOAL OS 7. The County will minimize land use conflict between open spaces and surrounding land uses. Policy OS 7.6 – Require that hillside development be compatible with natural features and the ability to develop the site in a manner which preserves the integrity and character of the hillside environment, including but not limited to, consideration of terrain, landform, access needs, fire and erosion hazards, watershed and flood factors, tree preservation, and scenic amenities and quality	The Proposed Project is approximately 1 mile southwest of San Timoteo Canyon Road in hilly terrain. The project may be visible from this road and other scenic routes, therefore, these Goals are considered further in the Visual Resources section of the EIR/EIS. While the project would be in an existing corridor through open space, it would not enhance the character of scenic routes in the County or improved open space corridors. Two County Eligible scenic highways are present in the Proposed Project study area: Beaumont Avenue and San Timoteo Canyon Road, both within the Loma Linda SOI. The Proposed Project would be located within an existing utility corridor, and the structures would be similar to the design of some of the existing structures within the corridor. By removing three transmission lines of different design and replacing them with two transmission lines of the same design, the Proposed Project would improve the visual characteristics of the ROW by reducing the ROW's structural complexity, industrial character, and associated visual contrast. The Project would be located within an established utility corridor, which would avoid the proliferation of additional ROWs across the hillside landscapes. Also, the Proposed Project would improve the visual characteristics of the ROW and hillside environment by replacing three transmission lines of different design with two lines of the same design, thereby reducing the ROW's structural complexity, industrial character, and associated visual contrast..	YES
NOISE ELEMENT		
GOAL N 1. The County will abate and avoid excessive noise exposures through noise mitigation measures incorporated into the design of new noise-generating and new noise-sensitive land uses, while protecting areas within the County where the present noise environment is within acceptable limits. GOAL N 2. The County will strive to preserve and maintain the quiet environment of mountain, desert and other rural areas.	During construction, the Proposed Project would include the use of equipment and helicopters that could generate excessive noise at noise-sensitive land uses. During construction, the ambient noise environment will increase, but this impact will cease with the conclusion of construction. Attainment of these Goals is evaluated in the EIR/EIS	NO

San Bernardino County General Plan, 2007 as amended

Applicable Policies	Determination	Consistent?
SAFETY ELEMENT		
GOAL S 1. The County will minimize the potential risks resulting from exposure of County residents to natural and man-made hazards in the following priority: loss of life or injury, damage to property, litigation, excessive maintenance and other social and economic costs.	Various aspects of the Proposed Project could pose risk of exposure to natural and man-made hazards. These are evaluated in various sections of the EIR/EIS, including: Geology, Mineral Resources, and Soils; Hydrology; and Wildland Fire. Through design, siting, and application of mitigation measures, risks are minimized.	YES
GOAL S 3. The County will protect its residents and visitors from injury and loss of life and protect property from fires.	Wildland fire is evaluated in the EIR/EIS and mitigation recommended to ensure that project construction activities do not increase fire risk. Operation of the upgraded line will not increase fire risk over current conditions. .	YES
GOAL S 6. The County will protect residents from natural and manmade hazards.	Various aspects of the Proposed Project could pose risk of exposure to natural and man-made hazards. These are evaluated in various sections of the EIR/EIS, including: Geology, Mineral Resources, and Soils; Hydrology; and Wildland Fire and mitigation measures recommended where appropriate.	YES
GOAL S 7. The County will minimize exposure to hazards and structural damage from geologic and seismic conditions.	Geologic and seismic conditions are evaluated in the Geology, Mineral Resources, and Soils; section of the EIR/EIS. Mitigation measures address this issue.	YES
GOAL S 8. The County will minimize exposure and potential of damage posed by aviation activity.	Aviation activity is evaluated in the Traffic and Transportation section of the EIR/EIS. Specific measures are required by FAA to ensure safety. Helicopter use will be consistent with FAA regulations and will follow a CPUC/BLM approved helicopter use plan.	YES
GOAL S 9. The County's emergency evacuation routes will quickly and efficiently evacuate all residents in the event of wildland fires and other natural disasters, and will ensure adequate access of emergency vehicles to all communities.	The Proposed Project would not block access or evacuation routes. Where road closures are required, these could be lifted during any emergency situation. Therefore, the project would be consistent with this Goal.	YES

4.2 Riverside County, California

Riverside County Comprehensive General Plan, 2003, as amended through 2014. Riverside County is the fourth-largest county in the State, stretching nearly 200 miles across and comprising over 7,200 square miles of river valleys, low deserts, mountains, foothills and rolling plains. Approximately 37 miles of the 45-mile 220 kV upgrade are in western Riverside County or its incorporated cities.

Riverside County Comprehensive General Plan, 2003, as amended through 3-11-14

Applicable Policies	Determination	Consistent?
BIOLOGICAL RESOURCES		
Chapter 3: Land Use Element; Open Space, Habitat & Natural Resource Preservation, Page LU-32		
LU 8.1: Provide for permanent preservation of open space lands that contain important natural resources, hazards, watercourses, and scenic and recreational values.	A portion of the Proposed Project would be constructed on open space areas of the County. Because the County's policies require the preservation of these areas, this policy is evaluated further in the biological resources section of the EIR/EIS. Mitigation measures are designed to address adverse impacts. In addition, the project is in a corridor already used for electric transmission.	YES
Chapter 3: Land Use Element; Watercourse Overlay, Page LU-74		
LU 29.1: Require that proposed projects on properties containing the Watercourse Overlay be reviewed for compliance with habitat, endangered species, flood control and applicable area plan-specific design standards.	The Proposed Project would not cross a Watercourse Overlay area. Therefore, the Proposed Project would be consistent with this policy.	YES
Chapter 5: Multipurpose Open Space Element, Floodplain and Riparian Area Management, Page OS-12		
OS 5.1: Substantially alter floodways or implement other channelization only as a "last resort," and limit the alteration to: a. that necessary for the protection of public health and safety only after all other options are exhausted; b. essential public service projects where no other feasible construction method or alternative project location exists; or c. projects where the primary function is improvement of fish and wildlife habitat.	The Proposed Project would not substantially alter floodways. Therefore, the Proposed Project would be consistent with this policy.	YES
OS 5.2: If substantial modification to a floodway is proposed, design it to reduce adverse environmental effects to the maximum extent feasible, considering the following factors: a. stream scour; b. erosion protection and sedimentation; c. wildlife habitat and linkages; d. groundwater recharge capability; e. adjacent property; and f. design (a natural effect, examples could include soft riparian bottoms and gentle bank slopes, wide and shallow floodways, minimization of visible use of concrete, and landscaping with native plants to the maximum extent possible). A site specific hydrologic study may be required.	The Proposed Project would not involve modification of floodways. Therefore, the Proposed Project would be consistent with this policy.	YES
OS 5.3: Based upon site, specific study, all development shall be set back from the floodway boundary a distance adequate to address the following issues: a. public safety; b. erosion; c. riparian or wetland buffer; d. wildlife movement corridor or linkage; and e. slopes.	The Proposed Project would not impact wildlife movement and is, therefore, consistent with this policy.	YES
OS 5.5: New development shall preserve and enhance existing native riparian habitat and prevent obstruction of natural watercourses. Incentives shall be utilized to the maximum extent possible.	The Proposed Project would not obstruct watercourses or significantly impact native riparian habitat. Therefore, the Proposed Project would be consistent with this policy.	YES

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OS 5.6: Identify and, to the maximum extent possible, conserve remaining upland habitat areas adjacent to wetland and riparian areas that are critical to the feeding, hibernation, or nesting of wildlife species associated with these wetland and riparian areas.	A portion of the Proposed Project would be constructed on open space areas of the County, potentially impacting wetland and riparian areas. Because the County's policies require the preservation of these areas, this policy will be evaluated further in the biological resources section of the EIR/EIS.	YES
OS 5.7: Where land is prohibited from development due to its retention as natural floodways, floodplains and watercourses, incentives should be available to the owner of the land including density transfer and other mechanisms as may be adopted. These incentives will be provided for the purpose of encouraging the preservation of natural watercourses without creating undue hardship on the owner of properties following these policies.	This policy addresses an incentives program for the preservation of natural watercourses and does not apply to the Proposed Project.	N/A
Chapter 5: Multipurpose Open Space Element, Wetlands, Page OS-13		
OS 6.1: During the development review process, ensure compliance with the Clean Water Act's Section 404 in terms of wetlands mitigation policies and policies concerning fill material in jurisdictional wetlands.	The Proposed Project would be ensured for compliance with the Clean Water Act. Potential impacts to wetlands are discussed in the biological resources sections of the EIR/EIS. The project would comply with 404 permit obligations. Wetlands would not be filled.	YES
OS 6.2: Preserve buffer zones around wetlands where feasible and biologically appropriate.	Potential buffer areas adjacent to the proposed transmission line and associated site improvements are discussed in the EIR/EIS. Wetlands and areas around wetlands are avoided where feasible.	YES
OS 6.3: Consider wetlands for use as natural water treatment areas that will result in improvement of water quality.	The Proposed Project would not conflict with this policy.	YES
Chapter 5: Multipurpose Open Space Element, Forest Resources, Page OS-19		
OS 8.1: Cooperate with federal and State agencies to achieve the sustainable conservation of forest land as a means of providing open space and protecting natural resources and habitat lands included within the MSHCPs.	A portion of the Proposed Project would be constructed on open space areas of the County. Review of the Proposed Project involves coordination with federal and State agencies. Therefore, the Proposed Project would be consistent with this policy.	YES
Chapter 5: Multipurpose Open Space Element, Vegetation, Page OS-20		
OS 9.1: Update the Vegetation Map for Western Riverside County in consultation with the California Department of Fish and Game, the Natural Diversity Data Base, the United States Forest Service, and other knowledgeable agencies. The County shall also provide these agencies with data as needed.	This policy requires coordination between Riverside County and the resources agencies in order to update the Vegetation Map for western Riverside County. The Proposed Project would not conflict with this policy; therefore, no further analysis is necessary.	YES
OS 9.3: Maintain and conserve superior examples of native trees, natural vegetation, stands of established trees, and other features for ecosystem, aesthetic, and water conservation purposes.	A portion of the Proposed Project would be constructed on open space areas of the County. The Proposed Project would include measures to protect biological resources; therefore, it would be consistent with this policy.	YES

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Applicable Policies	**Determination**	**Consistent?**
OS 9.4: Conserve the oak tree resources in the County.	A portion of the Proposed Project would be constructed on open space areas of the County that may contain oak trees. The Proposed Project would incorporate measures to protect oak trees if identified along the Proposed Project and alternative routes. Therefore, the Proposed Project would be consistent with this policy.	YES
Chapter 5: Multipurpose Open Space Element, Multiple Species Habitat Conservation Plans, Page OS-35		
OS 17.4: Require the preparation of biological reports in compliance with Riverside County Planning Department Biological Report Guidelines for development related uses that require discretionary approval to assess the impacts of such development and provide mitigation for impacts to biological resources until such time as the CVAG MSHCP and/or Western Riverside County MSHCP are adopted or should one or both MSHCP's not be adopted.	Biological surveys and reports were prepared for the Proposed Project. The results are incorporated into the biological resources sections of the EIR/EIS in compliance with County guidelines. The EIR/EIS takes into consideration the Western Riverside MSHCP and the Coachella Valley MSHCP. Appropriate mitigation measures are discussed as well.	YES
OS 17.5: Establish baseline ratios for mitigating the impacts of development related uses to rare, threatened and endangered species and their associated habitats to be used until such time as the CVAG MSHCP and/or Western Riverside County MSHCP are adopted or should one or both MSHCP's not be adopted.	Biological surveys and reports were prepared for the Proposed Project. The results are incorporated into the biological resources sections of the EIR/EIS in compliance with County guidelines. Appropriate mitigation measures will be discussed as well.	YES
Chapter 5: Multipurpose Open Space Element, Environmentally Sensitive Lands, Page OS-36		
OS 18.1: Preserve multi-species habitat resources in the County of Riverside through the enforcement of the provisions of applicable MSHCP's, if adopted.	The Proposed Project would comply with the provisions of the applicable MSHCP's.	YES
OS 18.2: Provide incentives to landowners that will encourage the protection of significant resources in the County beyond the preservation and/or conservation required to mitigate project impacts.	The Proposed Project would not conflict with this policy.	YES
VISUAL RESOURCES		
Land Use Element, Project Design, Page LU-22		
LU 4.1: Require that new developments be located and designed to visually enhance, not degrade the character of the surrounding area through consideration of the following concepts: a. Compliance with the design standards of the appropriate area plan land use category. l. Mitigate noise, odor, lighting, and other impacts on surrounding properties.	There are no aesthetic design standards pertaining to high-voltage transmission lines in the Land Use Element. The Proposed Project would result in the construction of upgraded transmission structures that would have a manufactured appearance with the potential to visually degrade the surrounding area. With mitigation, the project would be consistent with this policy	YES
Land Use Element, Land Use Compatibility , Page LU-28-30		
LU 6.1: Require land uses to develop in accordance with the General Plan and area plans to ensure compatibility and minimize impacts.	The Proposed Project would result in the construction of upgraded transmission facilities in an existing corridor with existing facilities; the continued use of the corridor for transmission would be consistent.	YES

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Applicable Policies	Determination	Consistent?
LU 6.4: Retain and enhance the integrity of existing residential, employment, agricultural, and open space areas by protecting them from encroachment of land uses that would result in impacts from noise, noxious fumes, glare, shadowing, and traffic.	The Proposed Project would result in the construction of upgraded transmission facilities with the potential to cause glare and shadows. However, this would be similar to existing conditions. Mitigation measures would address night lighting and surface treatments to prevent glare. As an existing land use, the line would not be an encroachment of a new land use. After construction, it would not create noise, fumes, or traffic.	YES
Land Use Element, Open Space, Habitat & Natural Resource Preservation, Page LU-32		
LU 8.2: Require that development protect environmental resources by compliance with the Multipurpose Open Space Element of the General Plan and federal and State regulations such as CEQA, NEPA, the Clean Air Act, and the Clean Water Act.	The project would be required to federal and State laws and regulations. Compliance with applicable laws and regulations would ensure consistency with the Open Space Element.	YES
Land Use Element, Hillside Development & Slope, Page LU-34		
LU 11.1: Apply the following policies to areas where development is allowed and that contain natural slopes, canyons, or other significant elevation changes, regardless of land use designation: a. Restrict development on visually significant ridgelines, canyon edges and hilltops through sensitive siting and appropriate landscaping to ensure development is visually unobtrusive.	The Project would cross several hilltops and ridgelines and would be located on canyon edges in Riverside County with the potential to cause additional skylining and appear more prominent and obtrusive due to greater structure heights. However, this potential impact would be offset by the reduction in structural complexity and industrial character in the ROW by eliminating the existing three transmission lines of different design and heights and replacing them with two transmission lines of identical design. Therefore, the Proposed Project would be consistent with this policy	YES
Land Use Element, Scenic Corridors, Page LU-36		
LU 13.1: Preserve and protect outstanding scenic vistas and visual features for the enjoyment of the traveling public.	There are no designated scenic vistas in the Proposed Project study area though the Proposed Project would be visible from two Officially Designated State Scenic Highways (SR 62 and SR 243), one Eligible State Scenic Highway (SR 111), and three County Eligible Scenic Highways (San Timoteo Canyon Road, Beaumont Avenue, and Whitewater Canyon Road). However, the Proposed Project would improve the characteristics of the portions of the ROW visible from the Designated and Eligible scenic highways, by reducing the ROW's structural complexity, industrial character, and associated visual contrast. Also, the new structures would not dominate the view of, nor attract the attention of, the casual observer from these roadways. The resulting visual change would be incremental and not inconsistent with this policy.	YES

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Applicable Policies	Determination	Consistent?
LU 13.3: Ensure that the design and appearance of new landscaping, structures, equipment, signs, or grading within Designated and Eligible State and County scenic highway corridors are compatible with the surrounding scenic setting or environment.	The Project would be visible from two Officially Designated State Scenic Highways (SR 62 and SR 243), one Eligible State Scenic Highway (SR 111), and three County Eligible Scenic Highways (San Timoteo Canyon Road, Beaumont Avenue, and Whitewater Canyon Road). However, the Proposed Project would improve the characteristics of the portions of the ROW visible from the Designated and Eligible scenic highways, by reducing the ROW's structural complexity, industrial character, and associated visual contrast. Also, the new structures would not dominate the view of, nor attract the attention of, the casual observer from these roadways. The resulting visual change would not be inconsistent with this policy.	YES
LU 13.4: Maintain at least a 50-foot setback from the edge of the right-of-way for new development adjacent to Designated and Eligible State and County Scenic Highways.	Project structures would be located within an existing utility corridor and would be more than 50 feet from the edge of scenic highway ROWs. Therefore, the Proposed Project would be consistent with this policy.	YES
Land Use Element, Open Space Area Plan Land Use Designations: Recreation, Page LU-57		
LU 19.4: Encourage that structures be designed to maintain the environmental character in which they are located.	The Proposed Project has the potential to be located within areas designated as Open Space/ Recreation. In many cases, the replacement transmission structures would be taller than existing structures. The overall environmental character would remain that of an electric transmission corridor.	YES
LU 20.2: Require that development be designed to blend with undeveloped natural contours of the site and avoid an unvaried, unnatural, or manufactured appearance.	The Proposed Project has the potential to contrast with the natural contours and appearance of the surrounding landscape. It is not possible to blend transmission structures with natural contours and to avoid a manufactured appearance.	NO
Policy LU 22.2 – Require that development be designed to blend with undeveloped natural contours of the site and avoid an unvaried, unnatural, or manufactured appearance.	Although the Proposed Project would be located within an established utility corridor and would have similar visual characteristics as the existing transmission line structures, the Proposed Project would still exhibit an industrial, manufactured appearance. Although the resulting visual impact would not be substantial, there is no mitigation available that would bring the Proposed Project as proposed, into consistency with this policy.	NO
LU 20.4: Ensure that development does not adversely impact the open space and rural character of the surrounding area.	The Project would be located within an established utility corridor, which would avoid the proliferation of additional ROWs. Also, the Proposed Project would improve the visual characteristics of the ROW by replacing three transmission lines of different design with two lines of the same design, thereby reducing structural complexity and industrial character within the ROW. Therefore, the Proposed Project would not adversely impact the open space and rural character of the surrounding area and would be consistent with this policy.	YES

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Applicable Policies	Determination	Consistent?
Circulation Element, Scenic Corridors, Page C-49		
C 19.1: Preserve scenic routes that have exceptional or unique visual features in accordance with Caltrans' Scenic Highways Plan.	Portions of the Proposed Project would be located in close proximity to designated and eligible scenic highways within Riverside County. This policy is directive to County officials. The Project would be visible from two Officially Designated State Scenic Highways (SR 62 and SR 243), one Eligible State Scenic Highway (SR 111), and three County Eligible Scenic Highways (San Timoteo Canyon Road, Beaumont Avenue, and Whitewater Canyon Road). However, the Proposed Project would improve the characteristics of the portions of the ROW visible from the Designated and Eligible scenic highways by reducing the ROW's structural complexity, industrial character, and associated visual contrast. Also, although taller than the existing structures, the incrementally greater height of the new structures would not dominate the view of, nor attract the attention of, the casual observer from these roadways. Therefore, the Proposed Project would be consistent with this policy.	YES
Circulation Element: Major Utility Corridors, Page C-58		
C 25.2: Locate new and relocated utilities underground when possible. All remaining utilities shall be located or screened in a manner that minimizes their visibility by the public.	The Proposed Project would be a major aboveground utility that would be visible from public roads. It is not feasible to place the high-voltage transmission lines underground.	YES
Multipurpose Open Space Element: Scenic Resources, Page OS- 44		
OS 21.1: Identify and conserve the skylines, view corridors, and outstanding scenic vistas within Riverside County.	The Proposed Project would affect a number of skyline views within the County. The Project would cross several hilltops and ridgelines and would be located on canyon edges in Riverside County with the potential to cause additional skylining and appear more prominent and obtrusive due to greater structure heights. However, this potential impact would be offset by the reduction in structural complexity and industrial character in the ROW by eliminating the existing three transmission lines of different design and heights and replacing them with two transmission lines of identical design. Therefore, the Proposed Project would be consistent with this policy.	YES

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Applicable Policies	**Determination**	**Consistent?**
Multipurpose Open Space Element: Scenic Corridors, Page OS-45		
OS 22.1: Design developments within designated scenic highway corridors to balance the objectives of maintaining scenic resources with accommodating compatible land uses.	The Proposed Project would affect views within eligible and designated scenic highways within Riverside County. However, the changes would be minor in the context of existing conditions. The Project would be visible two Officially Designated State Scenic Highways (SR 62 and SR 243), one Eligible State Scenic Highways (SR 111), and three County Eligible Scenic Highways (San Timoteo Canyon Road, Beaumont Avenue, and Whitewater Canyon Road). However, the Proposed Project would improve the characteristics of the portions of the ROW visible from the Designated and Eligible scenic highways by reducing the ROW's structural complexity, industrial character, and associated visual contrast. Also, although taller than the existing structures, the incrementally greater height of the new structures would not dominate the view of, nor attract the attention of, the casual observer from these roadways. Therefore, the Proposed Project would be consistent with this policy.	YES
LAND USE		
Chapter 3: Land Use Element, Infrastructure, Public Facilities & Service Provision, Page LU-28		
LU 5.4: Ensure that development and conservation land uses do not infringe upon existing public utility corridors, including fee owned rights-of-way and permanent easements, whose true land use is that of "public facilities." This policy will ensure that the "public facilities" designation governs over what otherwise may be inferred by the large scale general plan maps.	The Proposed Project would be constructed within an existing utility corridor and would continue to be compatible with public facility and open space land use designations. As such, the Proposed Project would be consistent with this policy.	YES
Chapter 3: Land Use Element, Public Facility Area Plan Land Use Designation, Page LU-67		
LU 25.6: Ensure that development and conservation land uses do not infringe upon existing public utility corridors, including fee owned rights-of-way and permanent easements, whose true land use is that of Public Facilities. This policy will ensure that the "public facilities" designation governs over what otherwise may be inferred by the large-scale general plan maps.	The Proposed Project would be constructed within an existing utility corridor and would continue to be compatible with public facility and open space land use designations. As such, the Proposed Project would be consistent with this policy.	YES
Chapter 5: Multipurpose Open Space Element, Mineral Resources, Page OS-29		
OS 14.2: Restrict incompatible land uses within the impact area of existing or potential surface mining areas.	The Proposed Project would traverse mining areas, but would be compatible with this land use.	YES
OS 14.5: Require that new non-mining land uses adjacent to existing mining operations be designed to provide a buffer between the new development and the mining operations. The buffer distance shall be based on an evaluation of noise, aesthetics, drainage, operating conditions, biological resources, topography, lighting, traffic, operating hours, and air quality.	The Proposed Project would traverse mining areas, but would be compatible with this land use designation. Construction of the transmission line would be coordinated with the mine owner.	YES

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Applicable Policies	**Determination**	**Consistent?**
WILDERNESS AND RECREATION		
Chapter 5: Multipurpose Open Space Element; Open Space, Parks and Recreation; Page OS-44		
OS 20.2: Prevent unnecessary extension of public facilities, services, and utilities, for urban uses, into Open Space–Conservation designated areas.	The Proposed Project would be constructed within an existing utility corridor that has been designated for public facility or open space use. It would not expand the ROW in the County, therefore, the project would be consistent with this policy	YES
AGRICULTURE		
Land Use, Land Use Compatibility, Page LU-30		
LU 6.4 Retain and enhance the integrity of existing residential, employment, agricultural, and open space areas by protecting them from encroachment of land uses that would result in impacts from noise, noxious fumes, glare, shadowing, and traffic.	The Proposed Project and alternatives would occur within an existing utility ROW and would not introduce an incompatible land use, nor would it create noise, fumes, substantial glare, or traffic. The shadowing that could result would be minor and would not impact agricultural areas. The Proposed Project would not conflict with this policy.	YES
Land Use, Agriculture, Page LU-49		
LU 16.1 Encourage retaining agriculturally designated lands where agricultural activity can be sustained at an operational scale, where it accommodates lifestyle choice, and in locations where impacts to and from potentially incompatible uses, such as residential uses, are minimized, through incentives such as tax credits.	The Proposed Project and alternatives would not preclude the retention of agriculturally designated lands at an operational scale. In addition, the Proposed Project would occur within an existing utility ROW and would not introduce an incompatible land use. The Proposed Project would not conflict with this policy.	YES
LU 16.4 Encourage conservation of productive agricultural lands. Preserve prime agricultural lands for high-value crop production.	The Proposed Project and alternatives would have the potential to impact agricultural resources. Some transmission structure sites may require occupation of prime or high-value crop land.	NO
Agricultural Resources – Page OS-18		
OS 7.3 Encourage conservation of productive agricultural lands and preservation of prime agricultural lands.	The Proposed Project and alternatives would have a potential to impact agricultural resources. To the extent feasible, prime lands would be avoided.	YES
OS 7.5 Encourage the combination of Agriculture with other compatible open space uses in order to provide an economic advantage to Agriculture. Allow by right, in areas designated Agriculture, activities related to the production of food and fiber, and support uses incidental and secondary to the onsite agricultural operation.	The Proposed Project would occur within an existing utility ROW in which transmission line operation would be a compatible use and would not conflict with this policy.	YES

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Applicable Policies	Determination	Consistent?
CULTURAL RESOURCES		
Cultural Resources, Page OS-42		
OS 19.3 Review proposed development for the possibility of cultural resources and for compliance with the cultural resources program. OS 19.4 To the extent feasible, designate as open space and allocate resources and/or tax credits to prioritize the protection of cultural resources preserved in place or left in an undisturbed state. (AI 145) OS 19.5 Exercise sensitivity and respect for human remains from both prehistoric and historic time periods and comply with all applicable laws concerning such remains.	The requirements of these policies will be satisfied by compliance with the NHPA Section 106 and CEQA processes. These may include inventory, evaluation, avoidance, mitigation, and/or monitoring. Mitigation measures would require the development and implementation of a Historic Properties Treatment Plan, which would include a research design and scope of work for evaluation of cultural resources and for data recovery or additional treatment of NRHP-eligible sites. Mitigation and treatment plans would need to be approved by State and local governments, and Native Americans. The Proposed Project and alternatives would be consistent with this policy	YES
PALEONTOLOGICAL RESOURCES		
Paleontological Resources, Page OS-42		
OS 19.6 Whenever existing information indicated that a site proposed for development has high paleontological sensitivity, a paleontological resource impact mitigation program (PRIMP) shall be filed with the County Geologist. The PRIMP shall specify the steps to be taken to mitigate impacts to paleontological resources. OS 19.7 Whenever existing information indicates that a site proposed for development has low paleontological sensitivity as shown in Figure OS-7, no direct mitigation is required unless a fossil is encountered during site development. Should a fossil be encountered, the County Geologist shall be notified and a paleontologist shall document the extent and potential significance of the paleontological resources on the site and establish appropriate mitigation measures for further site development. OS 19.8 Whenever existing information indicates that a site proposed for development has undetermined paleontological sensitivity as shown on Figure OS-7, a report shall be filed with the County Geologist documenting the extent and potential significance of the paleontological resources on site and identifying mitigation measures for the fossil and for impacts to significant paleontological resources.	The requirements of this policy will be satisfied by compliance with the NHPA Section 106 and CEQA processes. These may include inventory, evaluation, avoidance, mitigation, and/or monitoring.	YES
NOISE		
Noise Element		
Policy N.1.1: Protect noise-sensitive land uses from high levels of noise by restricting noise-producing land uses from these areas. If the noise producing land use cannot be relocated, then noise buffers such as setbacks, landscaping, or block walls shall be used.	The Proposed Project would involve new sources of noise that could affect noise-sensitive land uses. This policy was evaluated further in the EIR/EIS. However, noise from construction is a short tem impact, and noise from operations would not be at a high level.	YES

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Policy N.1.3: Consider the following uses noise-sensitive and discourage these uses in areas in excess of 65 CNEL: Schools; Hospitals; Rest Homes; Long Term Care Facilities; Mental Care Facilities; Residential Uses; Libraries; Passive Recreation Uses; and Schools. According to the State of California Office of Planning and Research General Plan Guidelines, and acoustical study may be required in cases where these noise-sensitive land uses are located in an area of 60 CNEL or greater. Any land use that is exposed to levels higher than 65 CNEL will require noise attenuation measures.	The Proposed Project would be located near some noise-sensitive land uses. Implementation of best management practices for construction noise and implementation of a helicopter noise control strategy would make the project consistent with this policy.	YES
Policy N.1.4: Determine if existing land uses will present noise compatibility issues with proposed project by undertaking site surveys.	The Proposed Project would be located near some noise-sensitive land uses. Implementation of best management practices for construction noise and implementation of a helicopter noise control strategy would make the project consistent with this policy.	YES
Policy N.1.5: Prevent and mitigate the adverse impacts of excessive noise exposure on the residents, employees, visitors, and noise-sensitive uses of Riverside County.	The Proposed Project would be located near some noise-sensitive land uses. Implementation of best management practices for construction noise and implementation of a helicopter noise control strategy would make the project consistent with this policy.	YES
Policy N.1.8: Limit the maximum permitted noise levels that cross property lines and impact adjacent land uses....	The Proposed Project would be located near some noise-sensitive land uses. Implementation of best management practices for construction noise and implementation of a helicopter noise control strategy would make the project consistent with this policy.	YES
Policy N.3.6: Discourage projects that are incapable of successfully mitigating excessive noise.	The Proposed Project would not result in excessive noise.	YES
Policy N.12.1: Minimize the impacts of construction noise on adjacent uses within acceptable practices.	The Proposed Project would be located near some noise-sensitive land uses. Implementation of best management practices for construction noise and implementation of a helicopter noise control strategy would make the project consistent with this policy.	YES
Policy N.12.2: Ensure that construction activities are regulated to establish hours of operation in order to prevent and/or mitigate the generation of excessive or adverse noise impacts on surrounding areas.	The Proposed Project would be located near some noise-sensitive land uses. Implementation of best management practices for construction noise and implementation of a helicopter noise control strategy would make the project consistent with this policy.	YES
Policy N.12.4: Require that all construction equipment utilizes noise reduction features (e.g., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer.	The Proposed Project would be located near some noise-sensitive land uses. Implementation of best management practices for construction noise and implementation of a helicopter noise control strategy would make the project consistent with this policy.	YES

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Applicable Policies	Determination	Consistent?
TRANSPORTATION AND TRAFFIC		
Circulation Element		
Policy C 2.1: Maintain the countywide target Levels of Service.	The Proposed Project and alternatives would result in temporary construction traffic. Required traffic controls and coordination with agencies having jurisdiction over roads would reduce expected construction traffic impacts. The Proposed Project and alternatives would not include significant operational traffic. Therefore, the Proposed Project and alternatives would be consistent with this policy.	YES
Policy C 3.6: Require private developers to be primarily responsible for the improvement of streets and highways service access to developing commercial, industrial, and residential areas.	The Proposed Project would not result in new substations or other industrial facilities. There would be no long-term future traffic loads created.	YES
Policy C 3.8: Restrict heavy-duty truck through-traffic in residential and community center areas and plan land uses so that trucks do not need to traverse these areas.	The Proposed Project would result in temporary heavy-duty truck trips during its construction phase. However, construction traffic would be limited to public roadways with minimal travel through residential areas. Therefore, the Proposed Project would be consistent with this policy.	YES
AIR QUALITY		
Air Quality Element, Sensitive Receptor Policies		
AQ 2.1: The County land use planning efforts shall ensure that sensitive receptors are separated and protected from polluting point sources to the greatest extent possible. AQ 2.2: Require site plan designs to protect people and land uses sensitive to air pollution through the use of barriers and/or distance from emissions sources when possible. AQ 2.3: Encourage the use of pollution control measures such as landscaping, vegetation and other materials, which trap particulate matter or control pollution.	The Proposed Project would not have substantial ongoing air pollution activities in this jurisdiction that could affect sensitive receptors, and the potential for sensitive receptor impacts for this area are addressed in the EIR/EIS.	YES
Stationary Source Policies		
AQ 4.1: Encourage the use of building materials/methods which reduce emissions.	The Proposed Project would implement Best Management Practices and comply with AQMD requirements. Therefore, the Proposed Project would be consistent with this policy.	YES
AQ 4.5: Require stationary pollution sources to minimize the release of toxic pollutants through: • Design features; • Operating procedures; • Preventive maintenance; • Operator training; and • Emergency response planning AQ 4.6: Require stationary air pollution sources to comply with applicable air district rules and control measures.	The Proposed Project is not likely to include stationary pollution sources in this jurisdiction.	YES
AQ 4.7: To the greatest extent possible, require every project to mitigate any of its anticipated emissions which exceed allowable emissions as established by the SCAQMD, MDAQMD, SOCAB, the Environmental Protection Agency and the California Air Resources Board.	The Proposed Project would conform to this policy through the implementation of air quality mitigation measures.	YES

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Applicable Policies	**Determination**	**Consistent?**
AQ 4.8: Expand, as appropriate, measures contained in the County's Fugitive Dust Reduction Program for the Coachella Valley to the entire County. AQ 4.9: Require compliance with SCAQMD Rules 403 and 403.1, and support appropriate future measures to reduce fugitive dust emanating from construction sites. AQ 4.10: Coordinate with the SCAQMD and MDAQMD to create a communications plan to alert those conducting grading operations in the County of first, second, and third stage smog alerts, and when wind speeds exceed 25 miles per hour. During these instances all grading operations should be suspended.	The Proposed Project would comply with SCAQMD Rule 403/403.1. Therefore, the Proposed Project would be consistent with these policies.	YES
HYDROLOGY & WATER RESOURCES		
Water Resources/Flooding, Page LU-74, Water Quality, Page OS-10, Floodplain and Riparian Management, Page OS-11, Flood and Inundation, Page S-33		
LU 29.1: Require that proposed projects on properties containing the Watercourse Overlay be reviewed for compliance with habitat, endangered species, flood control, and applicable area plan-specific design standards.	The Proposed Project would conform to this policy through the implementation of mitigation measures, which provide flood control and prevention procedures.	YES
OS 3.3: Minimize pollutant discharge into storm drainage systems and natural drainage and aquifers.	The Proposed Project would conform to this policy through implementation mitigation measures, which provide policies and procedures for hazardous substance storage, use and control.	YES
OS 5.1: Substantially alter floodways or implement other channelization only as a "last resort," and limit the alteration to: **a.** that necessary for the protection of public health and safety only after all other options are exhausted; **b.** essential public service projects where no other feasible construction method or alternative project location exists; or **c.** projects where the primary function is improvement of fish and wildlife habitat.	The Proposed Project would conform to this policy through the implementation mitigation measures, which provide procedures to avoid active drainage channels.	YES
OS 5.3: Based upon site specific study, all development shall be set back from the floodway boundary a distance adequate to address the following issues: a. public safety; b. erosion; c. riparian or wetland buffer; d. wildlife movement corridor or linkage; and e. slopes.	The Proposed Project would conform to this policy through the implementation mitigation measures, which provide erosion control procedures.	YES
S 4.1: For new construction and proposals for substantial improvements to residential and nonresidential development within 100-year floodplains as mapped by FEMA or as determined by site specific hydrologic studies for areas not mapped by FEMA, the County shall apply a minimum level of acceptable risk; and disapprove projects that cannot mitigate the hazard to the satisfaction of the Building Official or other responsible agency.	The Proposed Project would conform to this policy through the implementation of mitigation measures, which provide flood control and prevention procedures. Riverside County will have the opportunity to review and comment on the EIR/EIS.	YES

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Applicable Policies	Determination	Consistent?
S 4.2: Enforce provisions of the Building Code in conjunction with the following guidelines: **a.** All residential, commercial and industrial structures shall be flood-proofed from the 100-year storm flow, and the finished floor elevation shall be constructed at such a height as to meet this requirement. Critical facilities should be constructed above grade to the satisfaction of the Building Official, based on federal, State, or other reliable hydrologic studies. **b.** Critical facilities shall not be permitted in floodplains unless the project design ensures that there are two routes for emergency egress and regress, and minimizes the potential for debris or flooding to block emergency routes, either through the construction of dikes, bridges, or large-diameter storm drains under roads used for primary access. **c.** Development using, storing, or otherwise involved with substantial quantities of onsite hazardous materials shall not be permitted, unless all standards for evaluation, anchoring, and flood-proofing have been satisfied; and hazardous materials are stored in watertight containers, not capable of floating, to the extent required by State and federal laws and regulations. **d.** Specific flood-proofing measures may require: use of paints, membranes, or mortar to reduce water seepage through walls; installation of water tight doors, bulkheads, and shutters; installation of flood water pumps in structures; and proper modification and protection of all electrical equipment, circuits, and appliances so that the risk of electrocution or fire is eliminated. However, fully enclosed areas that are below finished floors shall require openings to equalize the forces on both sides of the walls.	The Proposed Project would conform to this policy through the implementation of mitigation measures, which provide flood control and prevention procedures. Use and storage of hazardous materials would be consistent with legal requirements and a hazardous materials management plan.	YES
S 4.4: Prohibit alteration of floodways and channelization unless alternative methods of flood control are not technically feasible or unless alternative methods are utilized to the maximum extent practicable.	The Proposed Project would conform to this policy through the implementation of mitigation measures, which provide procedures to avoid active drainage channels.	YES
S 4.8: Allow development within the floodway fringe, if the proposed structures can be adequately flood-proofed and will not contribute to property damage or risks to public safety.	The Proposed Project would conform to this policy through the implementation of mitigation measures, which provide flood control and prevention procedures.	YES
S 4.9: Within the floodway fringe of a floodplain as mapped by FEMA or as determined by site specific hydrologic studies for areas not mapped by FEMA, require development to be capable of withstanding flooding and to minimize use of fill. However, some development may be compatible within flood plains and floodways, as may some other land uses. In such cases, flood proofing would not be required. Compatible uses shall not, however, obstruct flows or adversely affect upstream or downstream properties with increased velocities, erosion backwater effects, or concentrations of flows.	The Proposed Project would conform to this policy through the implementation of mitigation measures, which provide flood control and prevention procedures.	YES

Riverside County Comprehensive General Plan, 2003, as amended through 3-11-14		
Applicable Policies	**Determination**	**Consistent?**
GEOLOGY, MINERAL RESOURCES, AND SOILS		
Fault Rupture Safety Element, Page S-9		
Policy S 2.1: Minimize fault rupture hazards through enforcement of Alquist-Priolo Earthquake Fault Zoning Act provisions and the following policies: a. Require geologic studies or analyses for critical structures, and lifeline, high-occupancy, schools, and high-risk structures, within 0.5 miles of all Quaternary to historic faults shown on the Earthquake Fault Studies Zones map. b. Require geologic trenching studies within all designated Earthquake Fault Studies Zones, unless adequate evidence, as determined and accepted by the County Engineering Geologist, is presented.	The Proposed Project would conform to this policy through the implementation mitigation measures, which provide procedures to analyze, confirm, and avoid active fault locations.	YES
Seismically induced liquefaction, landslides, and slope failure Safety Element, Page S-10		
Policy S 2.1: Minimize fault rupture hazards through enforcement of Alquist-Priolo Earthquake Fault Zoning Act provisions and the following policies: a. Require geologic studies or analyses for critical structures, and lifeline, high-occupancy, schools, and high-risk structures, within 0.5 miles of all Quaternary to historic faults shown on the Earthquake Fault Studies Zones map. b. Require geologic trenching studies within all designated Earthquake Fault Studies Zones, unless adequate evidence, as determined and accepted by the County Engineering Geologist, is presented.	The Proposed Project would conform to this policy through the implementation of mitigation measures, which provide procedures to analyze, confirm, and avoid active fault locations.	YES
Policy S 2.2: Require geological and geotechnical investigations in areas with potential for earthquake-induced liquefaction, landsliding or settlement as part of the environmental and development review process, for any structure proposed for human occupancy, and any structure whose damage would cause harm.	The Proposed Project would conform to this policy through the implementation of mitigation measures, which provide procedures for evaluating, avoiding and minimizing earthquake-induced soil instability impacts.	YES
Policy S 2.3: Require that a State-licensed professional investigate the potential for liquefaction in areas designated as underlain by "Susceptible Sediments" and "Shallow Ground Water" for all general construction projects.	The Proposed Project would conform to this policy through the implementation of mitigation measures, which provide procedures for investigating the potential for liquefaction in suspect areas.	YES
Slope and soil instability hazards, Hillside areas Safety Element, Page S-25		
Policy S 3.1: Require the following in landslide potential hazard management zones, or when deemed necessary by the California Environmental Quality Act: a. Preliminary geotechnical and geologic investigations. b. Evaluations of site stability, including any possible impact on adjacent properties, before final project design is approved. c. Consultant reports, investigations, and design recommendations required for grading permits, building permits, and subdivision applications be prepared by State-licensed professionals.	The Proposed Project would conform to this policy through the implementation of mitigation measures, which provide procedures for evaluating, avoiding and minimizing potential soil instability impacts.	YES
Policy S 3.3: Before issuance of building permits, require certification regarding the stability of the site against adverse effects of rain, earthquakes, and subsidence.	The Proposed Project would conform to this policy through the implementation of mitigation measures, which provide procedures for preparation of professionally certified geologic/ geotechnical soil investigations and reports.	YES

Riverside County Comprehensive General Plan, 2003, as amended through 3-11-14

Applicable Policies	Determination	Consistent?
Policy S 3.4: Require adequate mitigation of potential impacts from erosion, slope instability, or other hazardous slope conditions, or from loss of aesthetic resources for development occurring on slope and hillside areas.	The Proposed Project would conform to this policy through the implementation of several Mitigation Measures, which provide procedures for evaluating, avoiding and minimizing potential erosion and soil instability impacts.	YES
Wind Erosion Safety Element, Page S-30		
Policy S 3.11: Require studies that address the potential of this hazard on proposed development within "High" and "Very High" wind erosion hazard zones.	The Proposed Project would be constructed in High Wind Erosion Susceptibility areas. This issue would be evaluated as part of the EIR/EIS analysis. Therefore, the Proposed Project would be consistent with this policy.	YES
Policy S 3.13: Require buildings to be designed to resist wind loads.	The Proposed Project would follow design standards for wind loads on towers. The Proposed Project would not conflict with this policy.	YES

Riverside County Comprehensive General Plan, Area Plans. The following area plans are an extension of the County of Riverside General Plan and Vision Statement. The Goals and Policies identified above for the Riverside County Comprehensive General Plan are applicable and express the goals of the following area plans. The area plans detail the specific physical, environmental, and economic characteristics for areas within the Riverside County Comprehensive General Plan area. While the area plans do not include specific policies for the development of utility corridors, construction and operation of the Proposed Project would be evaluated for consistency with both the specific area plans and the Riverside County Comprehensive General Plan policies and goals.

Using the Riverside County Comprehensive General Plan as the primary foundation, the area plans establish policies for development and conservation within the identified area. Because the Proposed Project would include the upgrading of an existing SCE 220 kV transmission line these area plans identify additional policies and direction for development and conservation specifically for the following specific geographic areas:

- **Reche Canyon/Badlands Area Plan, 2011.** The Reche Canyon/Badlands Area Plan contains policies that guide the physical development and land uses in this rugged unincorporated portion of Riverside County. The Reche Canyon/Badlands area is a predominantly mountainous, rural residential, and rugged natural open space region in northwestern Riverside County. The area consists of expansive rural and mountainous terrain, with low-lying habitat and agricultural valley areas in the southern portion of the planning area. It is distinguished by the immense variety of physical features found in this singular portion of the county. The land is devoted to agriculture, rural residential, commercial, mining, public facility and recreational uses. Of these, rural and hillside residential uses consume the largest territory. The rural communities of Reche Canyon and Pigeon Pass are located in the northwesterly portion of the planning area. Scattered and clustered hillside and rural residential uses are situated in the area.

Reche Canyon/Badlands Area Plan, 2011		
Applicable Policies	**Determination**	**Consistent?**
BIOLOGICAL RESOURCES		
Land Use, Local Land Use Policies, Page 29		
Equestrian Uses		
RCBAP 2.1: Ensure the provision and/or preservation of equestrian trails and related facilities in the Reche Canyon/ Badlands area.	The Proposed Project includes the construction of an access road that could potentially be used for recreation. Existing equestrian trails would not be removed as a result of the Proposed Project.	YES
Multipurpose Open Space, Local Open Space Policies, Pages 45-48		
RCIP Vision/Multipurpose Open Space		
RCBAP 13.1: Protect visual and biological resources in the Reche Canyon/Badlands area through adherence to General Plan policies found in the Multipurpose Open Space Element.	The Multipurpose Open Space Element of the County General Plan has been reviewed and considered during the EIR/EIS analysis. Mitigation measures are designed to be protective of resources or to provide offsetting mitigation.	YES
Floodplains and Watercourses		
RCBAP 14.1: Protect the watercourse and floodplain areas, and provide recreational opportunities and flood protection through adherence to policies in the Open Space, Habitat and Natural Resources Preservation section of the General Plan Land Use Element, and the Watershed Management section of the General Plan Multipurpose Open Space Element.	A portion of the Proposed Project would be constructed on open space areas of the County, and potentially affect watercourses and floodplain areas. Most structures would be at higher elevations in this area, along ridges and away from watercourses and floodplains. Policies of the General Plan are considered when developing mitigation measures protective of these resources.	YES
Multiple Species Habitat Conservation Plan		
RCBAP 16.1: Conserve habitat that captures the diversity of the Riverside Lowlands bioregion within the Reche Canyon/Badlands area. The Reche Canyon/Badlands region includes substantial areas of remaining natural habitat within the Riverside Lowlands, including portion of the San Jacinto River, the Badlands, Reche Canyon area, and the Mystic Lake/San Jacinto Wildlife Area.	A portion of the Proposed Project would be constructed on open space areas of the County in and existing transmission corridor. It would have minimal impact on habitat, and those impacts would be offset by mitigation.	YES
RCBAP 16.2: Conserve the existing habitat values in the Reche Canyon/Badlands portion of the San Jacinto River with a focus on conservation of flood plain areas supporting Traver-Domino-Willows soils. Conservation should focus on maintaining habitat for sensitive plant species and maintaining habitat for sensitive plant species and maintaining and enhancing linkage values along this portion of the San Jacinto River between the San Jacinto and Santa Ana Mountains.	A portion of the Proposed Project would be constructed on open space areas of the County. The Proposed Project would include measures to protect biological resources. Therefore, the Proposed Project would be consistent with this policy.	YES
RCBAP 16.3: Conserve existing vernal pool complexes associated with the San Jacinto River flood plain, in the Mystic Lake/San Jacinto Wildlife Area. Conservation should focus on vernal pool surface area and supporting watersheds.	A portion of the Proposed Project would be constructed on open space areas of the County, and potentially affect vernal pools. However, the Proposed Project would include measures to protect biological resources. Therefore, the Proposed Project would be consistent with this policy.	YES
RCBAP 16.4: Conserve existing, intact upland habitat blocks between Sycamore Canyon Park area, Box Springs Mountain Reserve, and San Bernardino County to the north, focusing on sage scrub, grassland, and chaparral habitat.	The project would not be located in this area. Connections between these habitat areas would not be impeded by the Proposed Project	YES

Reche Canyon/Badlands Area Plan, 2011		
Applicable Policies	**Determination**	**Consistent?**
RCBAP 16.5: Provide for a connection of intact habitat between San Jacinto Wildlife Area/Mystic Lake and adjacent Badlands area to the north.	Connections between these habitat areas would not be impeded by the Proposed Project.	YES
RCBAP 16.6; Provide for connection of intact habitat between the Badlands and San Bemardino National Forest to the south.	Connections between these habitat areas would not be impeded by the Proposed Project.	YES
RCBAP 16.7: Conserve high-quality sage scrub and chamise chaparral in order to protect core population of Bell's sage sparrow in Badlands area.	A portion of the Proposed Project would be constructed on open space areas of the County, and potentially impact sage scrub and chamise chaparral. Mitigation is provided for any loss of this habitat.	YES
RCBAP 16.8: Conserve San Jacinto Valley crownscale, vernal barley, Davidson's saltbush, Coulter's goldfields, and spreading navarretia. Conservation should focus on the Traver–Domino-Willows soil series occurring in the San Jacinto River flood plain. Key populations of these three species are known to exist within this section of the San Jacinto River	A portion of the Proposed Project would be constructed on open space areas of the County. Mitigation is provided for any loss of this habitat.	YES
RCBAP 16.9: Conserve vemal pool complexes supporting thread-leaved brodiaea and California Orcutt grass known to exist within the Reche Canyon/Badlands Area Plan.	A portion of the Proposed Project would be constructed on open space areas of the County, and potentially affect vemal pools. Mitigation is provided for any loss of this habitat.	YES
RCBAP 16.10: Conserve alluvial scrub and alkali vernal plain habitat supporting a key population of smooth tarplant, Wright's trichocoronis, and little mousetail within this section of the San Jacinto River system.	A portion of the Proposed Project would be constructed on open space areas of the County, and potentially affect vemal pools. Mitigation is provided for any loss of this habitat...	YES
RCBAP 16.11: Conserve sandy-granitic soils within chaparral and coastal sage scrub habitats capable of supporting Payson's jewelflower and prostrate spineflower known to exist within the Reche Canyon/Badlands area.	A portion of the Proposed Project would be constructed on open space areas of the County, and would potentially affect these soils. Mitigation is provided for any loss of this habitat.	YES
RCBAP 16.12: Conserve existing populations of the California gnatcatcher in the Reche Canyon/Badlands area.	The Proposed Project may impact gnatcatchers and their habitat. However, the Proposed Project would include measures to protect biological resources. Therefore, the Proposed Project would be consistent with this policy.	YES
VISUAL RESOURCES		
Circulation: Scenic Highways, Page 36		
RCBAP 11.1: Protect the scenic highways in the Reche Canyon/ Badlands area from change that would diminish the aesthetic value of adjacent properties through policies in the Scenic Corridors sections of the General Plan Land Use, Multipurpose Open Space, and Circulation Elements.	The Proposed Project would affect views within two County eligible scenic roadways (San Timoteo Canyon Road and Redlands Boulevard) within the Reche Canyon/Badlands Planning Area. The project is not on adjacent properties to these roads and is in an existing corridor wherein transmission structures already exist.	YES

Reche Canyon/Badlands Area Plan, 2011		
Applicable Policies	**Determination**	**Consistent?**
Multipurpose Open Space		
RCBAP 13.1: Protect visual and biological resources in the Reche Canyon/Badlands area through adherence to General Plan policies found in the Multipurpose Open Space Element.	General Plan Policy OS 21.1 is to identify and conserve the skylines, view corridors, and outstanding scenic vistas within Riverside County. Although the Proposed Project would cross Reche Canyon, the Proposed Project would be replacing one transmission line with a new transmission line of similar design. Therefore, the perceptible change by the casual viewer would be minimal, and the Proposed Project would be consistent with this policy..	YES
AGRICULTURE		
Land Use, Agriculture, Page 29		
RCBAP 3.1: Preserve the viability of Agriculture in the region through adherence to policies found in the Agriculture Area Plan Designation section of the General Plan Land Use Element, and policies located in the Agricultural Resources section of the Multipurpose Open Space Element.	The Proposed Project and alternatives would not preclude the retention of agriculturally designated lands at an operational scale. In addition, the Proposed Project would occur within an existing utility ROW and would not introduce an incompatible land use..	YES
TRANSPORTATION AND TRAFFIC		
RCBAP 9.2: Maintain the County's roadway Level of Service standards as described in the Level of Service section of the Riverside County Comprehensive General Plan Circulation Element.	The Proposed Project and alternatives would result in temporary construction traffic. However, implementation of Mitigation Measure T-7a would reduce expected construction traffic impacts. The Proposed Project and alternatives would not include significant operational traffic. Therefore, the Proposed Project and alternatives would be consistent with this policy.	YES
HYDROLOGY & WATER RESOURCES		
Water Resources/Flooding, Local Hazards Policies, Flooding, Page 49		
RCBAP 17.2: Require that proposed development projects that are subject to flood hazards, surface ponding, high erosion potential or sheet flow be submitted to the Riverside County Flood Control and Water Conservation District for review.	The Proposed Project would conform to this policy through the implementation of all APMs and Mitigation Measures associated with Hydrology and Water Resources. Riverside County will have the opportunity to review and comment on this EIR/EIS.	YES
GEOLOGY, MINERAL RESOURCES, AND SOILS		
Seismic/Liquefaction Local Hazard Policies, Page 50		
Policy RCBAP 19.1: Protect life and property from seismic-related incidents through adherence to policies in the Seismic Hazards section of the General Plan Safety Element.	The Proposed Project would conform to this policy through the implementation of several Mitigation Measures, which provide procedures for avoiding and minimizing earthquake-induced soil instability impacts.	YES

- **Pass Area Plan, 2003, as amended.** The Pass, or more specifically the San Gorgonio Pass Area, is a distinctive geographical area between the Coachella, San Jacinto, and Moreno Valleys. The Badlands separate the Pass Area Plan from Moreno Valley to the west and the San Jacinto Valley to the south. The San Jacinto Mountains form the southern boundary and the San Bernardino Mountains generally define the northern boundary. The Coachella Valley lies immediately to the east of the planning area. In relation to other area plans, the Pass is bounded by the Reche Canyon/Badlands Area Plan to the west, the San Jacinto Valley Area Plan and Riverside Extended Mountain Area Plan (REMAP) to the south, and the Western Coachella Valley Area Plan to the east. The Cities of Redlands and Yucaipa, which are located within the County of San Bernardino, lie to the north. The incorporated Cities of Banning, Beaumont, and Calimesa are located within the Pass, as well as the unincorporated communities of Cherry Valley, Cabazon, and Banning Bench.

Pass Area Plan, 2003, as amended		
Applicable Policies	**Determination**	**Consistent?**
BIOLOGICAL RESOURCES		
Multipurpose Open Space, Local Open Space Policies, Watersheds, Floodplains, and Watercourses, Pages 49 and 51		
PAP 14.1: Protect the Santa Ana, San Jacinto, and Salton Sea watersheds and surrounding habitats, and provide flood protection through adherence to the Watershed Management section of the General Plan Multipurpose Open Space Element.	Watersheds would not be significantly impacted by the Proposed Project. Therefore, the Proposed Project would be consistent with this policy.	YES
PAP 15.1: Protect viable oak woodlands through adherence to the Oak Tree Management Guidelines and Best Management Practices adopted by Riverside County.	A portion of the Proposed Project would be constructed on open space areas of the County that may contain oak trees. Mitigation for any loss of this vegetation is provided in the EIR/EIS.	YES
PAP 16.5: Conserve coastal sage scrub patches which support known populations of granite night lizard and granite spiny lizard.	A portion of the Proposed Project would be constructed on open space areas of the County that may contain coastal sage scrub patches. Mitigation for any loss of this vegetation is provided in the EIR/EIS.	YES
PAP 16.8: Maintain wetlands and wetland connections via Noble Creek to conserve wetland species and wildlife dispersal.	A portion of the Proposed Project would be constructed on open space areas of the County that may contain wetlands. Mitigation for any loss of this resource is provided in the EIR/EIS.	YES
PAP 16.9: Maintain a contiguous connection between the proposed reserves in San Bernardino County and the Badlands area.	Connections between the proposed San Bernardino County and the Badlands areas preserves would not be impeded by the Proposed Project.	YES
VISUAL RESOURCES		
Land Use, Mt. Palomar Nighttime Lighting		
PAP 9.1: Adhere to the County's lighting requirements for standards that are intended to limit light leakage and spillage that may interfere with the operations of the Palomar Observatory.	It is not expected that the Proposed Project would require additional night lighting within the Pass Planning Area. If the FAA requires lighting on certain towers, such as near the Banning Municipal Airport, this would take precedence over local policy. Such lighting would not be significant in comparison to existing highway and urban lighting in the vicinity.	YES

Pass Area Plan, 2003, as amended		
Applicable Policies	**Determination**	**Consistent?**
Circulation, Scenic Highways		
PAP 12.1: Protect the scenic highways in the Pass from change that would diminish the aesthetic value of adjacent properties in accordance with the Scenic Corridors sections of the General Plan Land Use, Multipurpose Open Space, and Circulation Elements.	Within the Pass Area Plan boundaries, the Proposed Project would be visible from one Officially Designated State Scenic Highway (SR 243), and two County Eligible Scenic Highways (San Timoteo Canyon Road and Beaumont Avenue). However, the Proposed Project would improve the characteristics of the portions of the ROW visible from the designated and eligible scenic highways by reducing the ROW's structural complexity, industrial character, and associated visual contrast. Also, although taller than the existing structures, the incrementally greater height of the new structures would not dominate the view of, nor attract the attention of, the casual observer from these roadways. Therefore, the Proposed Project would be consistent with this policy.	YES
AGRICULTURE		
Agricultural Preservation, Page 35		
PAP 7.1: Protect farmland and agricultural resources within the Pass planning area through adherence to the Agricultural Resources section of the General Plan Multipurpose Open Space Element and the Agriculture Land Use Designation Policies section of the General Plan Land Use Element.	The Proposed Project would have a potential to impact agricultural resources during construction. However, this is a short-term impact. Operation of the project would not affect agriculture.	YES
TRANSPORTATION AND TRAFFIC		
PAP 1.1 To provide for the orderly development of Banning Municipal Airport and the surrounding area, comply with the Airport Land Use Compatibility Plan for Banning Municipal Airport as fully set forth in Appendix L and as summarized in Table 4, as well as any applicable policies related to airports in the Land Use, Circulation, Safety and Noise Elements of the Riverside County General Plan.	The Proposed Project would be subject to FAA requirements regarding the height of structures near the airport and any need for hazard lighting or marker balls. As described in the Traffic and Transportation section of the EIR/EIS, compliance with FAA requirements would ensure consistency with this policy.	YES
PAP 10.2: Maintain the County's roadway Level of Service standards as described in the Level of Service section of the Riverside County Comprehensive General Plan Circulation Element.	The Proposed Project would result in temporary construction traffic. However, implementation of a traffic management plan and coordination with agencies having jurisdictions over roads would address this policy. The Proposed Project would not include significant operational traffic; therefore, it would be consistent with this policy.	YES
HYDROLOGY & WATER RESOURCES		
Water Resources/Flooding – Cabazon, Page 32		
PAP 5.3: Allow uses that can be periodically flooded in areas within the 100-year flood zone. Such uses might include agriculture, golf courses, recreational uses, utilities, surface mining operations, parking, landscaping, and compatible resource development.	The Proposed Project would conform to this policy through the implementation mitigation measures, which provide flood control and prevention procedures.	YES
PAP 5.4: Require building pads to be raised, at minimum, to the elevation of the 100-year flood zone, for any habitable structures within the 100-year flood zone.	The Proposed Project would not place any habitable structures within the 100-year flood zone; therefore, it would be consistent with this policy.	YES

Pass Area Plan, 2003, as amended		
Applicable Policies	**Determination**	**Consistent?**
Flooding, Page 56		
PAP 17.3: Require that proposed development projects that are subject to flood hazards, surface ponding, high erosion potential or sheet flow be submitted to the Riverside County Flood Control and Water Conservation District for review.	The Proposed Project would conform to this policy through the implementation of Mitigation Measures associated with Hydrology and Water Resources. Riverside County will have the opportunity to review and comment on this EIR/EIS.	YES
GEOLOGY, MINERAL RESOURCES AND SOILS		
Seismic/Liquefaction		
PAP 19.1: Protect life and property from seismic-related incidents through adherence to policies in the Seismic Hazards section of the General Plan Safety Element.	The Proposed Project would conform to this policy through the implementation of Mitigation Measures, which provide procedures for avoiding and minimizing earthquake-induced soil instability impacts.	YES

- **Western Coachella Valley Area Plan, 2012.** As the entryway to the vast desert areas of eastern Riverside County, Western Coachella Valley is surrounded by the mountainous area of the REMAP to the west and southwest, The Pass Area Plan to the west, the Eastern Coachella Valley Area Plan to the east, and San Bernardino County and Joshua Tree National Park to the northeast. The Western Coachella Valley Area Plan boundary encompasses eight cities: Desert Hot Springs, Palm Springs, Cathedral City, Rancho Mirage, Palm Desert, Indian Wells, La Quinta, and Indio.

Western Coachella Valley Area Plan, 2012		
Applicable Policies	**Determination**	**Consistent?**
BIOLOGICAL RESOURCES		
Watershed, Floodplains, and Watercourses, Page 59		
WCVAP 21.1: Protect the Whitewater River watershed and habitat, and provide recreational opportunities and flood protection through adherence to policies in the Open Space, Habitat and Natural Resources Preservation section of the General Plan Land Use Element and the Watershed Management section of the General Plan Multipurpose Open Space Element.	A portion of the Proposed Project would be constructed on open space areas of the County, and potentially affect the Whitewater River watershed. The watershed would be spanned by the project and would not be affected except for visually. However, visual impacts would be similar to existing conditions with regard to the presence of transmission structures and conductors spanning the river.	YES
Habitat Conservation		
WCVAP 22.1: Protect biological resources in the Western Coachella Valley through adherence to General Plan policies found in the Fish and Wildlife Habitat section of the Multipurpose Open Space Element, as well as policies contained in the Coachella Valley Multiple Species Habitat Conservation Plan, upon the latter's adoption.	The Proposed Project would adhere to the policies in the General Plan and the Coachella Valley MSHCP.	YES
VISUAL RESOURCES		
Land Use: Industrial Uses		
WCVAP 12.4: Require the screening and/or landscaping of outdoor storage areas, such as contractor storage yards and similar uses.	The Proposed Project would require the establishment of a construction yard at Devers, within the Western Coachella Valley Plan Area. This yard would use existing disturbed land and would be among other electric transmission and generation facilities existing in the vicinity.	YES

Western Coachella Valley Area Plan, 2012

Applicable Policies	Determination	Consistent?
Policy WCVAP 13.4 – Require the screening and/or landscaping of outdoor storage areas, such as contractor storage yards and similar uses.	The Project would require the establishment of the Devers Material and Equipment Staging Area within the Western Coachella Valley Plan Area boundaries. The staging area would be located east of the Devers Substation on 9.5 acres that are currently in use as a gravel-topped, fenced staging yard for an electrical project. Effective implementation of Mitigation Measure VR-1a (*Construction Activities*) would help to minimize the temporary visual impacts from construction and storage yards to be consistent with this policy	YES
Land Use: Light Pollution		
WCVAP 16.1: Where outdoor lighting is proposed, require the inclusion of outdoor lighting features that would minimize the effects on the nighttime sky and wildlife habitat areas.	Some Proposed Project facilities (construction yards) may include night lighting with the potential to impact the nighttime sky and adjacent wildlife habitat areas. However, the lighting would be minimal and focused so as to not extend off properties or into the sky. Implementation of required mitigation would ensure that significant night lighting impacts do not occur and that the Proposed Project would be consistent with this policy.	YES
WCVAP 16.2: Adhere to the lighting requirements of the County Ordinance Regulating Light Pollution for standards that are intended to limit light leakage and spillage that may interfere with the operations of the Palomar Observatory.	Some Proposed Project facilities (construction yards) may include night lighting with the potential to impact the nighttime sky and adjacent wildlife habitat areas. Lighting would be minimal, consistent with safety and security needs, and focused so as to not extend offsite or upward into the night sky. Implementation of required mitigation would ensure that significant night lighting impacts do not occur and that the Proposed Project would be consistent with this policy.	YES
Circulation: Scenic Highways		
WCVAP 19.1: Protect the scenic highways in the Western Coachella Valley from change that would diminish the aesthetic value of adjacent properties in accordance with the Scenic Corridors sections of the General Plan Land Use, Multipurpose Open Space, and Circulation Elements.	Within the WCVAP boundaries, the Proposed Project would be visible from one Officially Designated State Scenic Highway (SR 62), one Eligible State Scenic Highway (SR 111), and one County Eligible Scenic Highway (Whitewater Canyon Road). However, by replacing three transmission lines of different design with two transmission lines of the same design, the Proposed Project would improve the visual characteristics of the portions of the ROW visible from the Designated and Eligible scenic highways by reducing the ROW's structural complexity, industrial character, and associated visual contrast. Also, although taller than the existing structures, the incrementally greater height of the new structures would not dominate the view of, nor attract the attention of, the casual observer from these roadways. Therefore, the Proposed Project would be consistent with this policy..	YES

Western Coachella Valley Area Plan, 2012		
Applicable Policies	**Determination**	**Consistent?**
Multipurpose Open Space		
WCVAP 20.1: Protect visual and biological resources in the Western Coachella Valley through adherence to General Plan policies found in the Fish and Wildlife Habitat section of the Multipurpose Open Space Element.	The Proposed Project would affect visual and biological resources within the Western Coachella Valley Planning Area. To the extent feasible, these are mitigated. However, significant visual impacts could remain. Therefore, the project may not be consistent with this policy.	NO
TRANSPORTATION AND TRAFFIC		
WCVAP 17.2: Maintain the County's roadway Level of Service standards as described in the Riverside County Comprehensive General Plan Circulation Element.	The Proposed Project and alternatives would result in temporary construction traffic. However, implementation mitigation measures would reduce expected construction traffic impacts. The Proposed Project and alternatives would not include significant operational traffic. Therefore, the Proposed Project and alternatives would be consistent with this policy.	YES
GEOLOGY, MINERAL RESOURCES, AND SOILS		
Wind Erosion and Blow Sand – Local Hazard Policies, Page 66		
WCVAP 24.2: Require protection of soil in areas subject to wind erosion or blowsand. Mitigation measures that may be required include, but are not limited to, windbreaks, walls, fences, vegetative groundcover, rock, other stabilizing materials, and installation of an irrigation system or provision of other means of irrigation.	Wind erosion and blows and would occur during construction only; permanent structures for the Proposed Project would not be susceptible or expected to cause unusual wind erosion.	YES
Seismic/Liquefaction – Local Hazard Policies, Page 67		
WCAVP 26.1: Protect life and property from seismic-related incidents through adherence to policies in the Seismic Hazards section of the General Plan Safety Element.	The Proposed Project would conform to this policy through the implementation of several Mitigation Measures, which provide procedures for avoiding and minimizing earthquake-induced soil instability impacts.	YES
Slope – Local Hazard Policies, Page 67		
WCAVP 26.1: Protect life and property through adherence to the Slope and Soil Instability Hazards section of the General Plan Safety Element, the Environmentally Sensitive Lands section of the General Plan Multipurpose Open Space Element, the Hillside Development and Slope section of the General Plan Land Use Element, and the policies of the Rural Mountainous and Open Space-Rural Land Use Designations.	The Proposed Project would conform to this policy through the implementation of several Mitigation Measures, which provide procedures for evaluating, avoiding and minimizing potential erosion and soil instability impacts.	YES

Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP), 2003. The Western Riverside County MSHCP is a comprehensive, multi-jurisdictional habitat Conservation Plan focusing on conservation of species and their associated habitats in Western Riverside County. The MSHCP Area covers approximately 1.26 million acres (1,966 square miles); it includes all unincorporated county from the crest of the San Jacinto Mountains to the Orange County line, as well as the jurisdictional areas of the Cities of Temecula, Murrieta, Lake Elsinore, Canyon Lake, Norco, Corona, Riverside, Moreno Valley, Banning, Beaumont, Calimesa, Perris, Hemet, and San Jacinto.

The MSHCP serves as a Habitat Conservation Plan pursuant to Section 10(a)(1)(B) of the federal Endangered Species Act of 1973, as well as a Natural Communities Conservation Plan (NCCP) under the NCCP Act of 2001. The MSHCP is used to allow the participating jurisdictions to authorize "take" of plant and wildlife species identified within the Plan Area. The United States Fish and Wildlife Service and California Department of Fish and Wildlife have authority to regulate the take of Threatened, Endangered, and

Rare Species. The overall goal of the MSHCP is to enhance and maintain biological diversity and ecosystem processes while allowing future economic growth within the Plan Area.

Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP), 2003

Applicable Policies	Determination	Consistent?
BIOLOGICAL RESOURCES		
The Pass Area Plan, Section 3.3.10, the Pass Area Plan		
The City of Banning, City of Beaumont, and City of Calimesa sit within the Pass Panning Area Plan. The three cities combined are included within the 8,540-13,925–acre target conservation range on Additional Reserve Lands for the entire Pass Area Plan. The Pass Area Plan is divided into three Subunits which includes the Potrero/Badlands area, the Badlands/San Bernardino National Forest, and San Timoteo Creek. Descriptions of Planning Species, Biological Issues and Considerations and Criteria for each Area Plan Subunit within the Pass Area Plan are presented in this plan.	The Proposed Project would cross the three Pass Area Plan subunits, but would include measures to reduce potential impacts to the area.	YES
Reche Canyon/Badlands Area Plan, Section 3.3.11, Reche Canyon/Badlands Area Plan		
The Reche Canyon/Badlands Area is comprised of existing Public/Quasi-Public Lands and Additional Reserve Lands. The City of Moreno Valley sits entirely within this area plan. This plan is divided into four subunits which include the Box Springs (East), Reche Canyon, Badlands (North), and the San Jacinto Wildlife Area/Mystic Lake.	The Proposed Project would cross Reche Canyon/Badlands, but would include measures to reduce potential impacts to the area.	YES

4.3 City of Redlands, California

City of Redlands General Plan, 1995 as amended. The City of Redlands is located in San Bernardino County, halfway between Los Angeles and Palm Springs. The General Plan area is bounded on the north by the Santa Ana Wash, the City of Highland, and the San Bernardino Mountains, on the east by the Crafton Hills and the City of Yucaipa, on the south by the Riverside County boundary and The Badlands, and on the west by the City of Loma Linda and the City of San Bernardino. The Proposed Project would include the upgrading of an existing SCE 220 kV transmission line in the City of Redlands General Plan boundary as well as relocation of 66 kV and 12 kV power lines and installation of fiber optic communications lines.

City of Redlands General Plan, 1995 as amended through August 2010

Applicable Policies	Determination	Consistent?
BIOLOGICAL RESOURCES		
Section 4.0 Land Use Element, Southern Area Hills and Canyons (Live Oak and San Timoteo Canyons), Page 9 - 10		
4.41g: Preserve natural vegetation and wildlife areas to create wildlife corridors extending throughout the Live Oak Canyon and San Timoteo Canyon areas.	This policy relates to wildlife corridors and their preservation; however, utility corridors are often used for wildlife movement as well.	YES
4.41i: The portion of San Timoteo Creek, as defined by its floodway easements or flood control fee title, lying within the corporate boundary of the City is hereby declared to be Resource Preservation land and shall be preserved for the purposes of promoting wildlife preservation, open space recreation and water conservation. No fencing or other barriers shall be permitted in this Resource Preservation area that impede or limit access to the free crossing or use of the area by wildlife or its use for open space recreational purposes.	The Proposed Project would occur within an existing utility corridor that could continue to be used for wildlife preservation, open space recreation, and water conservation. It would not constitute a barrier or impede wildlife access The Proposed Project would be consistent with this policy.	YES

City of Redlands General Plan, 1995 as amended through August 2010		
Applicable Policies	**Determination**	**Consistent?**
VISUAL RESOURCES		
City Design and Preservation Element: Section 3.10 City Design – Guiding Policies		
Policy 3.10e: Preserve the natural appearance of steep hillsides and ridges.	The Proposed Project would cross several hillsides and ridges within San Timoteo Canyon in the City of Redlands. Along this portion of the ROW, the Proposed Project would improve the visual characteristics of the ROW and hillside environment by replacing three transmission lines of different design with two lines of the same design, thereby reducing the ROW's structural complexity, industrial character, and associated visual contrast. From most viewing locations the visual change would appear less industrially complex, resulting in an improvement of views. Therefore, the Proposed Project would be consistent with this policy.	YES
Land Use Element: Section 4.41 Southern Area Hills and Canyons – Implementing Policies		
Policy 4.41d: Major topographic features within the San Timoteo and Live Oak Canyon areas shall be preserved, maintained and where possible, enhanced. Major ridgelines should not be modified although development on a ridgeline may be allowed where there is offsetting need demonstrated.	The Proposed Project would cross several hillsides and ridges within San Timoteo Canyon in the City of Redlands. The project would be in an existing transmission corridor. Ridgeline modifications would be minimal, to the extent needed for foundations, but would be visible. By their nature, transmission lines in hilly terrain are typically located along ridge lines or from hill top to hill top. The installation on hilltops is an offsetting need; it is not feasible to avoid ridgelines for a linear project through the area.	YES
Policy 4.41e: Within the Live Oak Canyon and San Timoteo Canyon areas, the canyon walls immediately below major ridges and vegetation thereon shall be preserved and enhanced where appropriate. Slopes that are in excess of 50% shall be preserved intact except for public safety needs.	Vegetation disturbance would be restored except at individual structure locations, where clearing is required for safety, and on access roads. Most of the access roads required in this area already exist. The project would not require disruption of slopes in excess of 50 percent.	YES
LAND USE		
Guiding Policies: Southeast Area – Section 4.42 (Southeast Area), Chapter 4: Land Use Element. Page 33		
Policy 4.42t: All utilities and public facilities in the Southeast Area shall be designed and constructed to preserve and enhance the perceived natural and historic character of this area.	The Proposed Project would involve improvements to existing transmission lines within the City of Redlands, including installation of an upgraded transmission line in the existing utility corridor. Some subtransmission lines would be relocated underground. As such, the Proposed Project would be consistent with this policy.	YES

City of Redlands General Plan, 1995 as amended through August 2010		
Applicable Policies	**Determination**	**Consistent?**
WILDERNESS AND RECREATION		
Guiding Policies: Trails – Section 7.11 (Trails), Chapter 7.0: Open Space and Recreation Element		
Policy 7.11f: Establish agreement with public agencies and private entities for development and maintenance of trails in rights-of-way and utility corridors. EVC 4.62d The [East Valley Corridor] Specific Plan should provide for extension of public services in a logical and functional manner to minimize impacts on service purveyors while maximizing areas that can accommodate development in a timely manner. EVC 4.62s: Complement the land use planning for the East Valley Corridor with comprehensive plans and programs for utilities and public facilities. EVC 4.62ff: Ensure compatibility between adjacent land use types within the Corridor area.	The Proposed Project would be constructed within an existing utility corridor that would continue to be available for open space and/or recreational development. The Proposed Project would be consistent with the City's goal of ensuring compatibility between adjacent types of land use, or the extension of utilities in a logical and functional manner. The existing WOD corridor is incorporated into the community's existing land use pattern of development. There are no trails in the existing WOD corridor in Redlands. The Proposed Project predominantly transects areas with established commercial uses; however, the Proposed Project would not preclude the development of trails within the ROW. The 220 kV transmission lines and 66 kV subtransmission lines would transect areas within the East Valley Corridor Specific Plan. In the Project Study Area, the East Valley Corridor Specific Plan uses consist of commercial uses. The existing WOD corridor is in an established ROW and the 66 kV subtransmission lines would primarily be constructed within or along existing public roads. The existing corridor is incorporated into the community's existing land use pattern, and would be consistent with the East Valley Corridor Specific Plan goals of the extension of public facilities in a logical manner.	YES
AGRICULTURE		
2.0 Growth Management Element – Implementing Policies: Growth Management		
2.0e: Encourage and promote orderly development and growth of urban areas while maintaining and encouraging the best possible use of agricultural land, protecting it against premature encroachment of non-agricultural development. Consider the costs of extending urban facilities and services in the review of urban development.	The Proposed Project would occur within an existing utility ROW and would not introduce an incompatible land use. The Proposed Project would not conflict with this policy.	YES
3.10 City Design, North Redlands – Section 3.10 City Design, North Redlands		
Maximize agricultural preservation. Citrus and other agricultural preservation should be retained where feasible for its aesthetic and biotic value as well as its contribution as the City's original economic base. North Redlands has extensive unsubdivided frontages along which citrus can continue to be efficiently farmed, buffering arterial streets without requiring a reduction in density.	The Proposed Project and alternatives would not preclude the continued preservation of citrus and other agricultural lands. Some limited area of existing orchards may be required for installation of one or two structures. Where suitable, the ROW is available for agricultural use. Overall, the Proposed Project would be consistent with this policy.	YES

City of Redlands General Plan, 1995 as amended through August 2010		
Applicable Policies	**Determination**	**Consistent?**
3.29 Agricultural and Scenic Areas – Implementing Policies: Agricultural and Scenic Areas		
3.29a Encourage preservation of citrus groves and other agricultural areas that are designated as having cultural or scenic significance. Encourage retention of existing privately owned citrus groves of all sizes, especially in historic neighborhoods.	Some limited area of existing orchards may be required for installation of one or two structures. Where suitable, the ROW is available for agricultural use. Overall, the Proposed Project would be consistent with this policy.	YES
3.29b Identify existing agricultural areas, scenic views, vistas, and streetscapes, including mountain, canyon, and valley vistas, urban view corridors, focal points and focal buildings.	The Proposed Project would comply with this policy through the preparation of this environmental document.	YES
7.41 Agriculture, Guiding Policies: Agriculture		
7.41a: Retain the maximum feasible amount of agricultural open space for its contributions to the local economy, lifestyle, air quality, habitat value and sense of Redlands' heritage.	Some limited area of existing orchards may be required for installation of one or two structures. Where suitable, the ROW is available for agricultural use. Overall, the Proposed Project would be consistent with this policy.	YES
7.41b Provide for continued operation of existing livestock/dairy farms in areas of the San Timoteo/Live Oak Canyon planning sector designated Rural Living and Very Low Density on the General Plan Diagram.	The Sam Timoteo/Live Oak Canyon planning sector is outside the Redlands sphere of influence; however the Redlands The Proposed Project and alternatives would not preclude the continued operation of existing livestock/ dairy farms.	YES
7.41 Agriculture, Implementing Policies: Agriculture		
7.41e: Encourage formation of a land trust to make the most efficient use of funds available for agricultural preservation.	The Proposed Project and alternatives would not include funding available for agricultural preservation. This policy is not relevant to the Proposed Project.	N/A
CULTURAL & PALEONTOLOGICAL RESOURCES		
Cultural Resources, Archaeologic and Paleontologic Resources		
Guiding Policy: 7.30a: Protect archaeologic and paleontologic resources for their aesthetic, scientific, educational, and cultural values. **Implementing Policies: [summarized]** 7.30b: Use Archaeological Resource Sensitivity Map to determine if the site contains known prehistoric or historic cultural resources. 7.30c: Require applicants to hire a consulting archaeologist to develop an archaeologic resource mitigation plan; monitor the project to ensure that mitigation measures are implemented. 7.30d: Require that areas found during construction to contain significant historic or prehistoric archaeologic artifacts be examined by a qualified consulting archaeologist or historian for appropriate protection and preservation. 7.30e: For projects involving federal land, or requiring federal permission or funding, ensure that applicants meet stricter criteria for archaeologic resource review, prior to commencement of work. 7.30f: Work with the San Bernardino County Museum to identify and protect Redlands' significant nonrenewable paleontologic resources.	Portions of this policy are programmatic and are the responsibility of the agency. The remainder of the requirements of this policy will be satisfied by compliance with the NHPA Section 106 and CEQA processes. These may include inventory, evaluation, avoidance, mitigation, and/or monitoring.	YES

City of Redlands General Plan, 1995 as amended through August 2010		
Applicable Policies	**Determination**	**Consistent?**
NOISE		
Noise Element		
Policy 9.0c: Support measures to reduce noise emissions by motor vehicles, aircraft, and trains.	The Proposed Project would involve use of motor vehicles that would cause noise. Implementation of best management practices for construction noise and implementation of a helicopter noise control strategy would make the project consistent with this policy.	YES
Policy 9.0w: Limit hours for all construction or demolition work where site-related noise is audible beyond the site boundary.	The Proposed Project would involve construction work. Implementation of best management practices for construction noise and implementation of a helicopter noise control strategy would make the project consistent with this policy.	YES
Policy 9.0y: Minimize impacts of loud trucks by requiring that maximum noise levels due to single events be controlled to 50 dB in bedrooms and 55 dB in other habitable spaces.	The Proposed Project would involve use of trucks for construction. Implementation of best management practices for construction noise and implementation of a helicopter noise control strategy would make the project consistent with this policy.	YES
PUBLIC HEALTH & SAFETY		
Water Quality – Soil Contamination		
Policy 8.20m: Require that applicants take soil samples prior to grading or construction in existing or past orchard or other agricultural areas which were treated historically with toxic chemicals such as DBCP. If contamination is discovered, prior to development consult with the appropriate agencies for proper clean-up measures.	A mitigation measure for the project requires identification of potentially contaminated soil in current or historic agricultural areas..	YES
Section 8.0 Health and Safety Element, Guiding Policy, Page 26		
8.70b: Insist on adequate setbacks from schools, housing, and care facilities for any additional high voltage power lines or substations to be constructed in the Planning Area.	The Proposed Project would involve improvements to existing transmission lines that are within an existing utility corridor within the City of Redlands, and would not involve the construction of new transmission lines or the expansion of the utility corridor. As such, the Proposed Project would be consistent with this policy.	YES
AIR QUALITY		
Health and Safety Element , 8.10 Air Quality		
8.15a: Aim for the minimum practicable particulate emissions from the construction and operation of roads and buildings. 8.15b: Reduce particulate emissions from roads, parking lots, construction sites, mining operations and agricultural lands. 8.15c: Reduce emissions from building materials and methods which generate excessive pollutants.	The Proposed Project would comply with SCAQMD requirements. Therefore, the Proposed Project would be consistent with this policy.	YES
HYDROLOGY & WATER RESOURCES		
Water Resources/Flooding – Section 8.0, 8.20 Water Quality		
8.20o: Design projects to minimize the possibility of wind or water erosion and, where necessary, require preparation and implementation of a soil erosion plan, including soil erosion mitigation during construction.	The Proposed Project would conform to this policy through the implementation of mitigation measures, which provide erosion control procedures.	YES

4.4 City of Loma Linda, California

City of Loma Linda General Plan, 2009. The City of Loma Linda is located in San Bernardino County, approximately 60 miles east of Los Angeles. The Proposed Project would include upgrading an existing SCE 220 kV transmission line as well as relocating 66 kV and 12 kV lines and installing a fiber optic communications line within the City of Loma Linda.

City of Loma Linda General Plan, 2009		
Applicable Policies	**Determination**	**Consistent?**
BIOLOGICAL RESOURCES		
Conservation and Open Space Element, Natural and Visual Open Space Resources, Guiding Policy and Implementing Policies for Open Space, Page 9-7		
9.2.10.2a: Base open space preservation and acquisition based on the evaluation of significant viewsheds and ridgelines, wildlife habitats and fragile ecosystems, significant scientifically, historically, or ecologically unique natural areas, passive recreational areas, and stream or creek environs.	The Proposed Project would be located in an existing corridor where viewsheds, ridgelines, wildlife habitats and fragile ecosystems may be affected. In particular these impacts are considered in the biological, visual, and recreation resources sections of the EIR/EIS. This policy is directive to local authorities regarding priorities.	YES
9.2.10.2f: The San Jacinto Fault Zone area should be preserved as open space through easement dedication during the review process of applicable new developments.	The San Jacinto Fault Zone is in the vicinity of the Proposed Project. The ROW remains open land except for utility infrastructure. Mitigation measures in the EIR/EIS required consideration of faults during project design.	YES
Conservation and Open Space Element, Biological Resources, Biological Resources Policies and Implementing Policies, Page 9-20		
Guiding Policy 9.4.4: Preserve habitats supporting rare and endangered species of plants and animals including wildlife corridors.	The Proposed Project will be located in an existing corridor where habitats supporting rare and endangered species may be affected. Mitigation measures are in place to minimize impacts and provide for offsetting compensation if needed. Wildlife corridors would not be effected.	YES
9.4.4a: Comply with federal policy of no net loss of wetlands through avoidance and clustered development. Where preservation is found to be infeasible (such as an unavoidable a road crossing through habitats), require (1) on-site replacement of wetland areas, (2) changing replacement, or (3) restoration of degraded wetland areas at a minimum ratio of one acre of replacement/restoration for each acre of impacted on-site habitat, such that the value of impacted habitat is replaced.	Because no wetlands occur in the Loma Linda portion of the Proposed Project.	YES
9.4.4b: Require appropriate setbacks adjacent to natural streams to provide adequate buffer areas ensuring the protection of biological resources.	A portion of the Proposed Project would be located in an existing corridor such that protection of natural streams is not required. Mitigation measures would address erosion and runoff risks.	YES
9.4.4c: Preserve, as feasible, the oak woodland areas within the City by requiring development to incorporate the trees into the development design.	Oak woodland areas do not occur in the project route in Loma Linda.	YES

City of Loma Linda General Plan, 2009

Applicable Policies	Determination	Consistent?
9.4.4d: Through the project approval and design review process, require new development projects to protect sensitive habitat areas including, but not limited to, coastal sage scrub, and native grasslands. Ensure the preservation in place of habitat areas found to be occupied by State and federally protected species. Where preserved habitat areas occupy areas that would otherwise be granted as part of a development project, facilitate the transfer of allowable density to other, non-sensitive portions of the site.	The Proposed Project would be located in areas where State and federally protected species and sensitive habitat may exist. Impacts are addressed by numerous biological resources mitigation measures. Because development does not occur in electric transmission ROWs, these areas are protective of habitats.	YES
9.4.4e: Through development review, retain, as feasible, wildlife corridors in the Planning Area in particular, the San Timoteo Wash area.	Utility corridors often serve as wildlife corridors and towers and conductors do not block any existing corridors.	YES
VISUAL RESOURCES		
Conservation and Open Space Element, Guiding Policy for Visual Resources, Page 9-11		
Protect views and unique landforms. a. Preserve outstanding natural features, such as the skyline of a prominent hill, rock outcroppings, the San Timoteo Creek Aviary Sanctuary, and native and/or historically significant trees. d. Limit development on ridgelines.	The project would erect transmission structures on hills and ridges where existing structures would be removed. However, the new structures may be larger and in different locations than the removed structures. There is no feasible way to have a linear project traverse the area without being on ridges. Along this portion of the ROW, the Proposed Project would replace one of three existing transmission lines with taller, double-circuit, lattice structures. The incrementally taller structures could cause slightly increased skylining depending on viewing location. However, in some cases, due to a lower positioning on the slopes, the increased height and skylining would be less noticeable and would exhibit structural prominence similar to the existing facilities. From most viewing locations the visual change would not appear substantial; however the Proposed Project, as proposed, would not be consistent with this policy.	NO
Follow-up Studies and Actions, Parks and Recreation Facilities, Page 11-5		
Work with Southern California Edison to improve transmission line corridors with attractive, community-serving uses and to upgrade the appearance of the transmission line corridors in conjunction with an expansion or co-use of the corridor.	The Proposed Project would include the upgrade of facilities within the existing transmission line corridor. Co-use and landscaping of the ROW is not considered as part of the project, but is a matter for the jurisdiction and SCE to negotiate. Current co-uses would be restored after construction.	YES

City of Loma Linda General Plan, 2009

Applicable Policies	Determination	Consistent?
LAND USE		
Special Planning Area E Implementing Policy j: Implement development of the Mission Road Special Planning Area E through the adoption of a specific plan(s) or planned development(s), so that specific siting of land uses/buildings, architectural design, landscaping, road infrastructure, utilities, and other elements can be planned in a comprehensive, rather than piecemeal, manner throughout the Special Planning Area. **Implementing Policy 8.10.7.1:** a) Work with Southern California Edison to improve transmission line corridors with attractive, community-serving uses such as ornamental planting and recreational uses, including trails and playing fields. ... d. Underground existing overhead utility lines throughout the City with available funding... g. Develop appropriate siting regulations for the installation of utilities and telecommunication facilities to minimize potential impacts to the community.	The Proposed Project improvements in the City of Loma Linda include improvements to Timoteo Substation, and the proposed 220 kV transmission lines, 66 kV subtransmission lines, and telecommunications facilities. The Proposed Project work in Timoteo Substation would involve only modifications to the 66 kV equipment, and work would occur on the 66 kV switchrack and within the MEER. The 220 kV transmission lines work includes replacement of existing transmission infrastructure within an existing transmission line ROW that has been established for several decades. New 66 kV subtransmission line improvements would be constructed primarily in existing public streets. Implementing policies for Special Planning Area E (Mission Road) primarily list the types of development allowed within the area. The Proposed Project would not conflict with the allowable land use development in this area. The Proposed Project would be consistent with Special Planning Area E implementing policies. There are multiple parks in the ROW in the City of Loma Linda, including a trail within the ROW south of Redlands Boulevard. The Proposed Project would not preclude the continued use of these park facilities or the development of additional park facilities within the ROW. The Proposed Project is consistent with the policy regarding the development of utility easements with community-serving uses.	YES
WILDERNESS AND RECREATION		
Public Services and Facilities Element, Identified Utility Issues and Opportunities, Page 8-23		
8.10.7.1 a: Work with Southern California Edison to improve transmission line corridors with attractive, community-serving uses such as ornamental planting and recreational uses, including trails and playing fields.	The Proposed Project would be constructed within an existing utility corridor that would continue to be available for open space and/or recreational development. The Proposed Project would not conflict with this policy.	YES
AGRICULTURE		
Adaptive Reuse and Preservation with New Development, Page 3-15		
c. Preserve the character of the existing citrus groves by preserving and incorporating strategically located existing trees or rows of existing trees into new development (i.e., in the form of landscaped setbacks and/or landscape treatments). Having accomplished this, the remaining grove may be removed.	The Proposed Project and alternatives would not preclude the preservation of the character of the existing citrus groves.	YES
Agricultural Resources, Page 9-21		
9.5.2: Guiding Policy: Preservation of agricultural land areas is a priority.	The Proposed Project would occur within an existing utility corridor and would not displace agricultural uses.	YES

City of Loma Linda General Plan, 2009		
Applicable Policies	**Determination**	**Consistent?**
CULTURAL & PALEONTOLOGICAL RESOURCES		
Cultural Resources, Guiding Policy, Page 9-27		
Preserve and protect the City's historic structures and neighborhoods. Identify and preserve the archaeological and paleontological resources in Loma Linda. e. Where new development occurs around an historic structure, ensure that the surrounding setting is compatible with the historic structure. f. As a standard condition of approval for new development projects, require that, if cultural or paleontological resources are encountered during grading, alteration of earth materials in the vicinity of the find be halted until a qualified expert has evaluated the find and recorded identified cultural resources.	The requirements of this policy will be satisfied by compliance with the NHPA Section 106 and CEQA processes and the State Health and Safety Code.	YES
NOISE		
Noise Element, Policies, Page 7-9		
a: Achieve and maintain exterior noise levels appropriate to planned land uses throughout Loma Linda as indicted below: • Residential Single-Family: 65 dBA within rear yards. Multifamily: 65 dBA within private yard or enclosed balcony spaces. Single/Multifamily, indoor noise level: 45 dBA with windows closed. • Schools Classrooms: 65 dBA exterior noise environment at the classroom location. Play and sports areas: 70 dBA. • Libraries, Churches, Hospitals, Nursing Homes: 60 dBA exterior noise environment at the building location. • Commercial/Industrial: 70 dBA exterior noise environment at the building location, unless additional interior mitigation is provided. h. Discourage new projects that have potential to create ambient noise levels more than 5 dBA above existing background noise within 250 feet of sensitive receptors, (e.g., schools, hospitals, churches, residential uses, etc.). i. Require new noise sources to use best available control technology (BACT) to minimize noise from all sources. j. Ensure that construction activities are regulated as to the hours of operation in order to avoid or mitigate noise impacts on adjacent noise-sensitive land uses. k. Require proposed development adjacent to occupied noise-sensitive uses to implement a construction-related noise mitigation plan that identifies the location of construction equipment storage and maintenance areas, and documents the methods that will be used to minimize impacts on adjacent noise-sensitive land uses, including, where needed, installation of temporary noise barriers. l. Require that all construction equipment utilize noise-reduction features (e.g., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer.	The Proposed Project would involve noise sources during construction and operation. Implementation of best management practices for construction noise and implementation of a helicopter noise control strategy would make the project consistent with this policy.	YES

City of Loma Linda General Plan, 2009

Applicable Policies	Determination	Consistent?
PUBLIC HEALTH & SAFETY		
Hazardous Waste and Materials		
10.5.2 Guiding Policy: Minimize the negative impacts associated with the storage, use, generation, transport, and disposal of hazardous materials. Policy c: Continue a program of regular inspections and monitoring to ensure compliance with local, State, and federal regulations, in order to reduce the risks associated with the use and handling of hazardous materials and wastes.	Limited use of hazardous chemicals is planned for construction. Mitigation measures will require chemical control and spill prevention/ clean-up plans.	YES
AIR QUALITY		
Conservation and Open Space Element, 9.3.6 Guiding Policy (Air Quality), Page 9-16		
Policy d: As part of the development review process for non-residential development, require the incorporation of best available technologies to mitigate air quality impacts.	The Proposed Project would conform to this policy through the implementation of air district requirements and air quality mitigation measures during construction	YES
HYDROLOGY & WATER RESOURCES		
Chapter 10.0 Public Health and Safety Element, 10.3 Slope Failure Hazards – Page 10-9		
10.3.2. Guiding Policy: Reduce the potential for property damage and personal injury from slope failure hazards and erosion. Implementing Policies. d. Require erosion-control measures in areas of steep slopes or areas with high erosion problems on all grading plans to reduce soil erosion from wind, grading and construction operations, and stormwater runoff.	The Proposed Project would conform to this policy through the implementation and Mitigation Measures associated with Geology and Soils and Hydrology and Water Resources.	YES
GEOLOGY, MINERAL RESOURCES, AND SOILS		
Conservation and Open Space Element, 9.2.9 Identified Visual and Natural Open Space Issues, Page 9-11		
9.2.10.1c: Require new development to be designated to conserve soil and avoid erosion by limiting cut and fill areas and the exporting of soil from the development site.	Erosion control measures would be implemented. The Proposed Project would occur in an existing utility corridor where cut and fill and exporting of soil from the development site would be minimal.	YES
Geologic and Seismic Hazards - Public Health and Safety Element, Page 10-3 – 10-5		
Minimize the risks of property damage and personal injury resulting from seismic and geologic hazards.	Seismic and geologic hazards are addressed by mitigation measures in the EIR/EIS	YES
j. Work with Southern California Edison, the Southern California Gas Company, pipeline companies, and industrial companies to implement measures to safeguard the public from seismic hazards associated with high voltage transmission lines, caustic and toxic gas and fuel lines, and flammable storage facilities.	The Proposed Project would conform to this policy through the implementation of Mitigation Measures, which provide procedures for evaluating, avoiding and minimizing seismic hazards and materials storage.	YES
Slope Failure Hazards - Public Health and Safety Element, Page 10-9 – 10-10		
a. Limit cut and fill slopes to 3:1 (33% slope) throughout the City to maintain slope stability unless an engineering geologist can establish to the City's satisfaction that a steeper slope would not pose undue risk to people and property. c. Require geologic and soils reports as part of the development review process and/or building permit process for development in the affected areas to minimize slope failure. d. Require erosion-control measures in areas of steep slopes or areas with high erosion problems on all grading plans to reduce soil erosion from wind, grading and construction operations, and stormwater runoff.	The Proposed Project would conform to this policy through the implementation of Mitigation Measures, which provide procedures for evaluating, avoiding and minimizing potential soil instability impacts.	YES

City of Loma Linda General Plan, 2009		
Applicable Policies	**Determination**	**Consistent?**
SOCIOECONOMICS		
Economic Development Element, Fiscal Health, Page 4-11		
a. Require new development to pay for its fair share of new infrastructure, public and community facilities, and the incremental operating costs it imposes on the City. ▪ New development shall incorporate such features as to ensure that it will not increase the cost of public services provided to existing development.	The new and upgraded electric transmission lines are intended to support adequate electrical distribution to meet existing and future demand. Therefore, the Proposed Project itself would be an infrastructure project that would accommodate existing and planned development within the City of Loma Linda. The project would not require new infrastructure or public and community facilities be developed. The Proposed Project would be in compliance with this policy.	YES

4.5 City of Grand Terrace, California

City of Grand Terrace General Plan, 2010. The City of Grand Terrace is approximately 3.5 square miles in size and is located in San Bernardino County. The Proposed Project would include the upgrading of an existing SCE 220 kV transmission line within a small part of the City of Grand Terrace. In addition, the Vista Substation is located within the City of Grand Terrace. While the General Plan does not include specific goals for the development of utility corridors, the following General Plan policies are applicable to the Proposed Project and alternatives.

City of Grand Terrace General Plan, December 2010		
Applicable Policies	**Determination**	**Consistent?**
BIOLOGICAL RESOURCES		
Open Space and Conservation Element		
Policy 4.2.5 The City shall act to reasonably conserve and protect significant biological resources.	This policy is directive of City actions. Impacts to biological resources will be evaluated in the EIR/EIS to ensure they are conserved and protected.	YES

City of Grand Terrace General Plan, December 2010		
Applicable Policies	**Determination**	**Consistent?**
LAND USE		
Goal 2.5: Provide for the preservation of natural resources and open space. Policy 2.5.2: Areas designated as Open Space shall be preserved to provide long term recreation opportunities as well as the preservation of scenic and environmental resources and the protection of public health and safety. Policy 4.1.3: The City shall evaluate the possibility of developing existing utility easements as linear parks. Policy 7.8.3: Coordinate with all utility companies to provide maintenance programs that minimize the impact to public streets and rights-of-way.	The Proposed Project would involve only modifications to the 220 kV equipment at the substation, and work would occur on the 220 kV switchrack and within the MEER. The transmission infrastructure improvements would occur within an existing transmission line ROW that has been established for several decades. The proposed telecommunication improvements located outside the existing 220 kV transmission lines ROW are associated with existing Vista Substation, and would be constructed primarily in existing public ROW. The existing corridor is incorporated into the community's existing land use pattern of development and open space. The Proposed Project would be consistent with the City's goal of preserving natural resources. The Proposed Project predominantly transects areas with established commercial or residential uses. There are existing bike lanes and the Grand Terrace Senior Center park within the ROW, and the Proposed Project would not preclude the continued use of these park facilities once construction is complete, or with the future development of additional park facilities within the ROW. The Proposed Project does not conflict with the policy regarding the development of utility easements as linear parks. During operation, maintenance activity impacts to public streets or ROW would be temporary.	YES
Housing Element		
Policy 8.3.9: Prevent the encroachment of incompatible uses into established residential neighborhoods.	The Proposed Project would be constructed within an existing utility corridor that would not be expanded within the City of Grand Terrace. As such, the Proposed Project would be consistent with this policy.	YES
CULTURAL & PALEONTOLOGICAL RESOURCES		
Open Space and Conservation Element		
Goal 4.9 Comply with state and federal regulations to ensure the protection of historical, archaeological, and paleontological resources. Policy 4.9.1 The City shall take reasonable steps to ensure that cultural resources are located, identified and evaluated to assure that appropriate action is taken as to the disposition of these resources.	The requirements of this policy will be satisfied by compliance with the NHPA Section 106 and CEQA processes. These may include inventory, evaluation, avoidance, mitigation, and/or monitoring.	YES

City of Grand Terrace General Plan, December 2010		
Applicable Policies	**Determination**	**Consistent?**
NOISE		
Noise Element		
Policy 6.1.2: Construction noise on adjacent land uses shall be minimized by limiting the permitted hours of activity. Policy 6.2.7: The City shall evaluate potential ground-bome vibration impacts as part of the land use planning process to mitigate or avoid detrimental impacts on adjacent land uses.	The Proposed Project would involve activities that create construction noise and vibration. Implementation of best management practices for construction noise and implementation of a helicopter noise control strategy would make the project consistent with this policy.	YES
VISUAL RESOURCES		
Land Use Element		
Policy 2.5.2 – Areas designated as Open Space shall be preserved to provide long-term recreation opportunities as well as the preservation of scenic and environmental resources and the protection of public health and safety.	The Project would be located within an existing transmission corridor, replacing an existing transmission line with a new transmission line. As a result, the proliferation of utility ROWs and possible encroachment on open space would be avoided, so the Proposed Project would be consistent with this policy.	YES
TRANSPORTATION AND TRAFFIC		
Circulation Element		
Policy 3.3.4: The City shall route truck traffic away from residential areas and work with regional agencies in order to mitigate potential impacts from regional traffic.	The Proposed Project would result in temporary heavy-duty truck trips during its construction phase. The Proposed Project would use designated truck routes and limit use of residential roadways. Therefore, the Proposed Project would be consistent with this policy.	YES
PUBLIC HEALTH & SAFETY		
Public Health and Safety Element, Geologic Hazards & Hazardous Materials		
Policy 5.1.1 All new development shall comply with current seismic design standards. Policy 5.1.2 All proposed developments shall be evaluated for impacts associated with geologic and seismic hazards. Policy 5.1.4 Grading plans for development projects shall include an approved drainage and erosion control plan to minimize the impacts from erosion and sedimentation during grading. Policy 5.2.2 All new developments in areas of slope instability shall be required to perform adequate geotechnical analysis and provide an engineered design to assure that slope instability will not impact the development.	All Proposed Project facilities are required to be designed to comply with current seismic design standards and to evaluate geologic hazards. Therefore, the Propose Project would be consistent with these policies	YES
Goal 5.4 Reduce the risk to life and property resulting from the use, transportation, storage, treatment, or disposal of hazardous materials and wastes.	Proper storage and handling of hazardous materials will be required by Hazardous Materials mitigation measures.	YES
AIR QUALITY		
Open Space and Conservation Element		
Policy 4.7.5: The City shall encourage employers to develop and implement trip reduction plans including alternate work schedules, rideshare programs, telecommuting, and employee education programs.	The Proposed Project would comply with SCAQMD requirement, and would provide for car-pooling to construction sites. Therefore, the Proposed Project would be consistent with this policy.	YES

City of Grand Terrace, Barton Road Specific Plan, 2003. This Specific Plan area covers an approximately 1.3-mile corridor along Barton Road extending from the Riverside Freeway (I-215) on the west, to the intersection of Barton Road and Victoria Street on the east. The Proposed Project would include the upgrading of an existing SCE 220 kV transmission line within the Barton Road Specific Plan Area.

The Barton Road Specific Plan is a regulatory plan that serves as zoning for properties within the boundaries of the Plan. This Specific Plan has been prepared in compliance with the goals and policies of the city's General Plan. The Specific Plan does not identify any goals or policies directly related to the development of utility corridors and therefore, no applicable policies were identified for the Proposed Project.

4.6 City of Colton, California

City of Colton General Plan, 1987-2013 adopted Plan Elements. The City of Colton is located in southwestern San Bernardino County and is surrounded by the Cities of Grand Terrace, Loma Linda, San Bernardino, Rialto, as well as unincorporated San Bernardino and Riverside Counties. The Proposed Project would include the upgrading of an existing SCE 220 kV transmission line within the City of Colton.

While the General Plan does not include specific goals for the development of utility corridors, the following policies are applicable to the Proposed Project.

City of Colton General Plan, 1987-2013		
Applicable Policies	Determination	Consistent?
BIOLOGICAL RESOURCES		
Open Space and Conservation Element (1987), Principles, Page 6-6, Plan Proposals Page 6-7		
1: Preserve and protect hillside and environmentally sensitive areas designated for growth through the use of strict hillside development standards.	The Proposed Project would occur within an existing utility corridor, and would not require additional development outside of the corridor. Refer also to the analysis of hillside development standards under Geology, Mineral Resources and Soils below.	YES
2: Regulation shall be used to maintain open space requiring: d) The grading of soil and construction of impervious surfaces on open space lands shall be strictly regulated.	The Proposed Project would occur within an existing utility corridor that allows for the maintenance and improvement of structures within the corridor. The project would implement measures to minimize the impacts of grading or reduce the amount of grading or ground disturbance.	YES

City of Colton General Plan, 1987-2013

Applicable Policies	Determination	Consistent?
VISUAL RESOURCES		
Open Space and Conservation Element, Principles, Page 6-6		
7: Outstanding scenic vistas and visual features shall be preserved and protected through the use of view easements, height limitations, and a design review board.	The Project would cross several hillsides and ridgelines south of Prado Lane and South Mohave Drive in the City of Colton. Along this portion of the ROW, the Proposed Project would replace one of three existing transmission lines with taller, double-circuit, lattice structures. The incrementally taller structures could cause slightly increased skylining depending on viewing location. However, in some cases, due to a lower positioning on the slopes, the increased height and skylining would be less noticeable and would exhibit structural prominence similar to the existing facilities. From most viewing locations the visual change would not appear substantial; however the Proposed Project, as proposed, would not be consistent with this policy.	NO
LAND USE		
Public Use Principle 1: Public improvements need to be implemented in a timely, efficient manner consistent with growth requirements and should be provided in part by future development, whenever possible. Open Space Principle 1: A functional and adequate open space system should be provided which will protect recreational, agricultural and other permanent open space uses.	The Proposed Project improvements in the City of Colton include the proposed 220 kV transmission lines. The Proposed Project involves the replacement of existing transmission infrastructure within an existing transmission line. The existing corridor is incorporated into the community's existing land use pattern. The Proposed Project would also facilitate the delivery of the new renewable generation resources located in the Coachella Valley area, and would reduce electric system congestion. Therefore, the Proposed Project is consistent with the City's Public Use Principle that supports the provision of public improvements, in this case electricity transmission infrastructure. The Proposed Project would not affect designated open space in the City of Colton. The Proposed Project has been designed to avoid or minimize impacts to the built and natural environment, including open space uses, to the extent practicable. The Proposed Project is consistent with the City's Open Space Principle 1.	YES
CULTURAL & PALEONTOLOGICAL RESOURCES		
Land Use Element (2013) Goals & Policies, Page LU-33		
LU-2.4: Protect structures of historical and architectural significance.	The Proposed Project would occur within an existing utility corridor and would not impact any structures of historical and architectural significance in the City of Colton. The Proposed Project would be consistent with this policy.	YES

City of Colton General Plan, 1987-2013

Applicable Policies	Determination	Consistent?
Cultural Resources Preservation Element (2000), Goals & Policies, Page 18 ff		
1a: Conserve in their entirety the largest and most unique archaeological sites.	The Proposed Project would occur within an existing utility corridor and would not impact any known archaeological sites within the City of Colton. The Proposed Project would be consistent with this policy.	YES
1.4: Require adequate mitigation of impacts to archaeological resources.	The EIR/EIS includes mitigation measures to reduce or minimize potential impacts to archaeological resources. The Proposed Project would be consistent with this policy.	YES
2f: Ensure future development is compatible with existing structures and district characteristics.	The Proposed Project would occur within an existing utility corridor that includes existing transmission lines. The Proposed Project would be consistent with this policy.	YES
NOISE		
Noise Element (1987), Standards, Page 5-7		
4: Exterior noise levels should not exceed 60 dBA at any time for such areas important to public need, and where the preservation of serenity and quietness is essential if the area is to continue to serve its intended purpose. Such areas could include parks, open spaces, amphitheaters, and other areas dedicated for activities requiring special qualities of serenity.	The Proposed Project would result in temporary construction noise that has the potential to exceed 60 dBA. Implementation of best management practices for construction noise and implementation of a helicopter noise control strategy would make the project consistent with this policy..	YES
TRANSPORTATION AND TRAFFIC		
Mobility Element (2013), Goals and Policies, Page M-52 ff		
M-3.5: Maintain intersection traffic flows at Level of Service of D during peak hours for all roadways in Colton, except at those locations identified in this Mobility Element where peak hour LOS E is allowed.	The Proposed Project would result in temporary construction traffic. However, construction traffic impacts would be reduced through the preparation of a transportation plan and the staging of construction workers offsite and shuttling them to construction sites. Work would occur through the project alignment at different times and there would be no large concentration of workers at any one site.	YES
Model Air Quality Element (1991), Topic 2: Ground Transportation, Goal 2, 2.1 Auto Use, Page 4 ff		
2.1.1: Use incentives, regulations and Transportation Demand Management in cooperation with other jurisdictions in the South Coast Air Basin to eliminate vehicle *trips* which would otherwise be made. 2.1.2: Use incentives, regulations and Transportation Demand Management in cooperation with other jurisdictions in the South Coast Air Basin to eliminate vehicle *miles* traveled for auto trips which still need to be made. 2.2.1: Promote and establish modified work schedules which reduce peak period auto travel.	The Proposed Project would result in temporary construction traffic. However, implementation of a transportation plan and the staging of construction workers offsite and shuttling them to construction sites would reduce this impacts.	YES
PUBLIC HEALTH & SAFETY		
Safety Element (1987), Fire Hazards, Page 7-6, 7-11; Emergency Preparedness, Page 7-8		
1: Define and limit the extent and intensity of development in areas of high fire hazard.	The Proposed Project would occur within an existing utility corridor and would not change the intensity or extent of development.	YES

City of Colton General Plan, 1987-2013

Applicable Policies	Determination	Consistent?
4: Multi-story structures and high-hazard structures shall comply with fire protection standards. 9: Distances between structures shall conform to standards for safe fire protection.	The Proposed Project would install new structures and conductor in an existing utility corridor. Best Management Practices would be implemented to ensure fire safety. Structures would not be close together..	YES
10. All development plans shall be reviewed by local planning, fire, water, health, road, and flood control authorities.	The City of Colton and its agencies will have the opportunity to review and comment on the EIR/EIS.	YES
4: Minimum road widths and clearances around structures shall follow the standards set in the Municipal Code.	The project would not develop new public roads. Access road widths and clearances were determined with the establishment of the corridor. Clearances around structures are set by the State to provide adequate protection. The Proposed Project would be consistent with this policy.	YES
18: Curtail use of heavy equipment during critical fire weather.	A Fire Plan will be established defining periods when work cannot occur because of fire ignition risk.	YES
AIR QUALITY		
Open Space and Conservation Element, Standards, Page 6-6		
4: Strict enforcement of water and air quality standards shall be applied to all industrial users through business license approvals, fire inspections and code enforcement of performance standards.	The Proposed Project would be required to comply with water and air quality standards. Any impacts to water and air quality identified in the EIR/EIS would be mitigated and these measures would be incorporated in the mitigation monitoring program for the Proposed Project.	YES
Model Air Quality Element (1991), Page 12		
5.1: Reduce particulate emissions from roads, parking lots, construction sites and agricultural lands. Program 5.1.1: Adopt incentives, regulations and procedures to manage paved roads so they produce the minimum practicable level of particulates. Program 5.1.2: Adopt incentives, regulations and procedures to minimize particulate emissions during road, parking lot and building construction. Program 5.1.3: Adopt incentives, regulations and procedures to control particulate emissions from unpaved roads, drives, vehicle maneuvering areas and parking lots.	The Proposed Project would comply with SCAQMD Rule 403 that requires reduction in air emissions.	YES
5.2: Reduce emissions from buildings materials and methods which generate excessive pollutants. Program 5.2.1: Adopt incentives, regulations and procedures to prohibit the use of building materials and methods which generate excessive pollutants.	The Proposed Project would implement Best Management Practices and comply with SCAQMD requirements to reduce air emissions.	YES
HYDROLOGY & WATER RESOURCES		
Open Space and Conservation Element, Principles, Page 6-6		
6: Restrict development in canyons and hillsides and control the plan of development to prevent obstruction of natural runoff or water courses and to prevent unwarranted scarring of hillsides.	The Proposed Project would occur within an existing utility corridor and would not include additional development outside of this corridor within the City of Colton. The project would implement measures that would prevent obstruction of natural runoff or watercourses and scarring of hillsides.	YES

City of Colton General Plan, 1987-2013		
Applicable Policies	**Determination**	**Consistent?**
GEOLOGY, MINERAL RESOURCES, AND SOILS		
Open Space and Conservation Element, Standards, Page 6-7		
5: Hillside development standards shall be adopted requiring: a) Focused EIRs for all hillside developments exceeding ten (10) parcels in a single development or subdivision. b) New development shall occur on those sites that require the least amount of grading and vegetation removal. c) Roads shall follow the natural topography and are not to exceed a grade of 12 percent.	The Proposed Project would occur in areas with ridges and hills within an existing utility corridor. Measures would be implemented that would require the avoidance or minimization of soil disturbance and new access roads in areas with high erosion hazards or potential slope instability. In addition, the EIR/EIS includes analysis of the Proposed Project on any hills and ridges within the City of Colton.	YES
Safety Element, Geologic Hazards, Page 7-6		
2: Structural design shall be compatible with the local geologic hazard.	The Proposed Project would conform to all structural design provisions, including the California Building Code, and would use standard foundation and structural design measures consist with local geologic conditions. Mitigation measures would be implemented that would minimize damage from local geologic hazards, such as potential earthquakes, slope instability, erosion hazards, and landslides.	YES

City of Colton, Reche Canyon Specific Plan, 1991. The area of Colton south of Barton Road is covered by the Reche Canyon Specific Plan. The Specific Plan provides a link between the General Plan and its city-wide policies, and the detailed procedures and restrictions such as zoning and subdivision ordinances. The Specific Plan tailors the broad policy of the General Plan to focus on a precise area. As such, the Specific Plan incorporates the goals and policies of the General Plan. The Reche Canyon Specific Plan does not identify any goals or policies directly related to the development of utility corridors and therefore, no applicable policies were identified for the Proposed Project not already identified in the General Plan.

4.7 City of Calimesa, California

City of Calimesa General Plan, 2014. The City of Calimesa is located within the Yucaipa Valley of the San Gorgonio Pass area. The San Bernardino Mountains and the Crafton Hills surround Calimesa to the north and west. The San Jacinto Mountains and the San Timoteo Badlands border the city to the east and south, respectively. The Proposed Project would include the upgrading of an existing SCE 220 kV transmission line within the City of Calimesa, along its border with Beaumont to the south.

While the General Plan does not include specific goals for the development of utility corridors, the following General Plan policies are applicable to the Proposed Project:

City of Calimesa General Plan, 2014		
Applicable Policies	**Determination**	**Consistent?**
BIOLOGICAL RESOURCES		
Land Use (Chapter 2) Page 2-22		
LU-13: Preserve the natural character and visual quality of the hillsides through sensitive site design and grading.	To the extent feasible, existing pads and roads would be used. .	YES

City of Calimesa General Plan, 2014

Applicable Policies	Determination	Consistent?
Resource Management (Chapter 6), Biological Resources, Page 6-12		
Goal RM-3: Conserve and protect native species and habitats. POLICY RM-11: The City will require the use of buffers, creative site planning, revegetation, and open space easements/dedications to conserve and protect important plant communities... POLICY RM-12: Protect vegetation communities and sensitive species that contribute to the region's environmental resources in order to prevent future endangerment of plant and animal communities. POLICY RM-13: Native oak trees should be preserved whenever feasible. If preservation is not possible, trees should be replaced with oak trees of the same species at a ratio of 1:1. POLICY RM-15: Work with state, federal, and local agencies on the preservation of sensitive vegetation and wildlife in the city.	The Proposed Project has the potential to remove native plant communities and wildlife habitat as a result of construction activities. Mitigation provides for the protection, restoration, or off-site compensation for loss of these resources.	YES
VISUAL RESOURCES		
Land Use (Chapter 2), Maintaining Calimesa's Character, Page 2-22		
POLICY LU-13: Preserve the natural character and visual quality of Calimesa's hillsides through sensitive site design and grading.	The Proposed Project would include the upgrading of a transmission line along several hillsides of at the southern edge of the City of Calimesa. To the extent feasible, existing pads and roads would be used. .	YES
Infrastructure and Public Services (Chapter 4), Utilities, Page 4-11		
POLICY IPS-5: The City will work with service providers to ensure adequate, and aesthetically pleasing, utility structures.	The aesthetic qualities of towers will be considered in the EIR/EIS. The City would have an opportunity to comment on utility structures.	YES
Resource Management (Chapter 6), Significant Landforms and Hillside Areas, Page 6-10		
POLICY RM-3: Encourage varied slope ratios on design slopes to reduce the visual impact of grading. Fill slopes should not have a grade steeper than 3:1. In no case shall cut or fill slopes be steeper than 2:1.	Grading may be required at new tower sites. Mitigation measures imposed will ensure that slopes are not overly steep and are properly revegetated and protected from erosion. The Proposed Project would be consistent with this policy.	YES
POLICY RM-8: Protect the city's scenic and visual resources by limiting ridgeline development and building heights.	The Proposed Project would be in an existing corridor. Existing transmission structures would be replaced on hill slopes and ridgelines. These structures typically would be taller than existing transmission structures.	NO

City of Calimesa General Plan, 2014

Applicable Policies	Determination	Consistent?
LAND USE		
Land Use (Chapter 2), Maintaining Calimesa's Character, Pager 2-22		
POLICY LU-16: Discourage land use conflicts and incompatibilities by providing buffers to include, but not be limited to, landscaping, setbacks, walls/fencing, site design, architectural features, density/intensity/operation reduction, or shielding of lighting between incompatible land uses and new development.	The Proposed Project improvements in the City of Calimesa include the proposed 220 kV transmission lines. The Proposed Project involves the replacement of existing transmission infrastructure within an existing transmission line ROW. The existing corridor is incorporated into the community's existing land use pattern. The Proposed Project is consistent with the City's goal of locating land uses to achieve maximum compatibility because the transmission infrastructure would be located in existing utility ROW. The Proposed Project would be within an existing utility corridor that currently contains overhead transmission lines. The access road for the portion of the project in Calimesa is used as a recreation trail. The upgraded project would be similar to the existing condition. The visual impact and land use impact of the line are considered in the EIR/EIS	YES
CULTURAL & PALEONTOLOGICAL RESOURCES		
Resource Management (Chapter 6) Cultural and Historic Resources		
RM-16: Identify, protect, and preserve the historical and cultural resources of the city.	The requirements of this policy will be satisfied by compliance with the NHPA Section 106 and CEQA processes.	YES
NOISE		
Noise (Chapter 9), Noise Goals and Policies, Page 9-6 ff		
Goal N-1: Ensure that all land uses are protected from excessive and unwanted noise. POLICY N-7: Consider the following uses to be sensitive to noise and vibration, and discourage these uses in areas where existing or projected future noise levels would be in excess of 65 dBA CNEL and/or vibration would be more than 0.0787 peak particle velocity (inches per second): ▪ Schools ▪ Hospitals ▪ Rest homes ▪ Long-term care facilities ▪ Mental care facilities ▪ Residential uses ▪ Libraries ▪ Passive recreation uses. POLICY N-25: Noise sources should be located away from existing noise-sensitive land uses unless appropriate noise control measures are provided. POLICY N-32: Require that all construction equipment be kept properly tuned and use noise reduction features (e.g., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer.	The Proposed Project would involve development of a new noise source and construction noise. Implementation of best management practices for construction noise and implementation of a helicopter noise control strategy would make the project consistent with this policy..	YES

City of Calimesa General Plan, 2014		
Applicable Policies	**Determination**	**Consistent?**
TRANSPORTATION AND TRAFFIC		
Transportation and Mobility (Chapter 3), Page 3-11		
POLICY TM-4: Maintain and rehabilitate roadways to preserve and improve the quality of city streets and thoroughfares that promote access and mobility between residential neighborhoods, employment centers, shopping, and health services. Action Item TM-4.5: Establish a truck route system which designates truck and commercial vehicle routes and provides adequately sized and designed roadways to meet the needs of trucks and commercial vehicles.	The Proposed Project would result in temporary heavy-duty truck trips during its construction phase. The Proposed Project would use designated truck routes and limit use of residential roadways. Therefore, the Proposed Project would be consistent with this policy and no further analysis is necessary.	YES
PUBLIC HEALTH & SAFETY		
Safety (Chapter 8), Safety Goals, Page 8-14		
GOAL SAF-2: Reduce the potential for health and safety exposure caused by hazardous waste contamination in the city.	The Proposed Project would not store or use significant quantities of hazardous materials during construction or during operation in the City of Calimesa.	YES
AIR QUALITY		
Air Quality (Chapter 10), Air Quality Goals, Page 10-7		
GOAL AQ-1: Improve air quality in Calimesa. GOAL AQ-2: Reduce vehicle trips and resulting emissions. GOAL AQ-4: Minimize exposure of sensitive uses to air pollution. GOAL AQ-5: Reduce greenhouse gas emissions and adapt to the anticipated effects of climate change.	The Proposed Project would conform to these goals through the implementation of the Air District requirements and mitigation measures.	YES
POLICY AQ-16: Reduce fugitive dust emissions from construction activities.	The Proposed Project would implement Best Management Practices and comply with AQMD requirements. Therefore, the Proposed Project would be consistent with this policy.	YES
HYDROLOGY & WATER RESOURCES		
Safety (Chapter 8), Flood Hazards, Page 8-15		
POLICY SAF-4: Ensure that development does not divert stormwater runoff onto adjacent properties or cause alteration of natural drainage courses that cannot be adequately handled by existing drainage facilities or the flood control improvements proposed with the development. POLICY SAF-5: New development shall not be permitted to cause alteration of natural drainage. POLICY SAF-4: Ensure that development does not divert stormwater runoff onto adjacent properties or cause alteration of natural drainage courses that cannot be adequately handled by existing drainage facilities or the flood control improvements proposed with the development. POLICY SAF-5: New development shall not be permitted to cause alteration of natural drainage POLICY SAF-6: All development shall comply with the flood control requirements of the City, as well as of the county, state, and federal governments.	The Proposed Project would not divert stormwater runoff or alter natural drainages. The Proposed Project would conform to this policy through the implementation of mitigation measures and Water Board requirements, which provide for Best Management Practices to control runoff and erosion	YES

City of Calimesa General Plan, 2014		
Applicable Policies	**Determination**	**Consistent?**
GEOLOGY, MINERAL RESOURCES, AND SOILS		
Resource Management (Chapter 6), Page 6-10		
POLICY RM-5: Require erosion control measures such as binders, revegetation, slope covers, and other practices which reduce erosion due to wind and water.	The Proposed Project would conform to this policy through the implementation of several APMs and Mitigation Measures, which provide procedures for evaluating, avoiding and minimizing potential erosion and soil instability impacts.	YES
Safety (Chapter 8), Seismic Hazards, Page 8-15		
POLICY SAF-1: Discourage development near areas susceptible to potential seismic or geological hazards. ACTION ITEM SAF-1.1: Require geological and geotechnical investigations in areas of potential seismic or geologic hazards as part of the environmental and development review process. Require mitigation of seismic or geologic hazards to the satisfaction of responsible agencies. ACTION ITEM SAF-1.2: Require liquefaction assessment studies in areas identified as having moderate to high liquefaction susceptibility.	The Proposed Project would conform to this policy through the implementation of mitigation measures, which provide procedures for identifying, evaluating, avoiding and minimizing earthquake-induced soil instability impacts and providing appropriate foundations.	YES

4.8 City of Beaumont, California

City of Beaumont General Plan, 2007. The City of Beaumont is located in the north-central part of Riverside County at San Gorgonio Pass between the areas influenced by the coast to the west and the Coachella Valley to the east. The Proposed Project would include the upgrading of an existing SCE 220 kV transmission line within the City of Beaumont General Plan Area.

City of Beaumont General Plan, 2007		
Applicable Policies	**Determination**	**Consistent?**
BIOLOGICAL RESOURCES		
Resource Management Element, Resource Management Goals & Policies, Page 48 ff		
Resource Management Goal 4: The City of Beaumont will promote the protection of biological resources. Policy 13: The City of Beaumont will encourage the protection of existing wildlife in the conservation areas located in the southerly portion of the Planning Area.	This policy encourages the protection of existing wildlife in conservation areas located in the southerly portion of the Planning Area. The Proposed Project would cross the northern portion of the Planning Area. Beaumont is subject to the Western Riverside County MSHCP, which is considered during the environmental review.	YES

City of Beaumont General Plan, 2007		
Applicable Policies	**Determination**	**Consistent?**
LAND USE		
Community Development Element, Goals & Policies, Page 14 ff		
Policy 1. The City of Beaumont, through the implementation of this General Plan, will promote a balance of land use and development types throughout the City. Policy 2. The City of Beaumont will implement an integrated land use and transportation system that accommodates existing and future service and utility demands. Policy 20: The City of Beaumont will continue to oversee the development of adequate and dependable public services and facilities to support both existing and future development.	The Proposed Project involves the replacement of existing transmission infrastructure within an existing transmission line ROW. The existing corridor is incorporated into the community's existing land use pattern. The City of Beaumont uses a portion of the corridor for recreation purposes. The proposed telecommunication improvements located outside the existing 220 kV transmission lines ROW are associated with existing substations, and would be constructed primarily in existing public ROW. The Proposed Project would facilitate the delivery of the new renewable generation resources located in the Coachella Valley area, and would reduce electric system congestion. The Proposed Project would be consistent with the City's goal of promoting a balance of land uses, accommodating existing and future utility needs, and supporting the provision of dependable public services and facilities.	YES
RECREATION		
Resource Management Element, Park and Recreation Policies, Page 48		
Policy 18: The City of Beaumont will evaluate the feasibility of expanded joint-use of the open space lands used for flood control and utility easements.	The Proposed Project would be constructed within an existing utility corridor that would continue to be available for open space and/or recreational development. The Proposed Project would not conflict with this policy.	YES
Policy 20: The City of Beaumont shall negotiate agreements with the utility companies, the Flood Control District for the establishment of recreation trails, linkages, uses, and appropriate landscaping within their respective rights-of-way.	The Proposed Project would be constructed within an existing utility corridor that would continue to be available for open space and/or recreational development based on any specific agreements between the utility and the City. The Proposed Project would not conflict with this policy.	YES
AGRICULTURE		
Community Development Element , Community Development Goals & Policies, Page 16		
Policy 10: The City of Beaumont encourages and supports the keeping of farms and equine animals in suitable locations and upon parcels which are a minimum of one acre in size, with a maximum of two large animals per acre, and shall establish appropriate zoning provisions to accommodate animal keeping.	The Proposed Project would not include the development or operation of agricultural lands. Therefore this policy is not relevant to the Proposed Project.	YES
Resource Management Element, Resource Management Goals & Policies, Page 49		
Policy 2: The City of Beaumont will support the maintenance of existing agricultural resources in the City to the extent feasible.	The Proposed Project would not preclude the maintenance of existing agricultural resources. Therefore Proposed Project would not conflict with this policy.	YES

City of Beaumont General Plan, 2007

Applicable Policies	Determination	Consistent?
CULTURAL & PALEONTOLOGICAL RESOURCES		
Implementation Element, Page 75		
Cultural Resource Management. Should archaeological or paleontological resources be encountered during excavation and grading activities, all work would cease until appropriate salvage measures are established. Appendix K *[sic]* of the California Environmental Quality Act (CEQA) Guidelines shall be followed for excavation monitoring and salvage work that may be necessary. Salvage and preservation efforts will be undertaken pursuant to Appendix K requirements outlined in CEQA.	The requirements of this policy would be satisfied by compliance with the NHPA Section 106 and CEQA processes. These may include inventory, evaluation, avoidance, mitigation, and/or monitoring.	YES
NOISE		
Safety Element, Page 64		
Goal 6 (Safety Element). The City of Beaumont will strive to control the adverse effects of noise in the environment. Safety Element Policy 24: The City of Beaumont will protect public health and welfare by eliminating existing noise problems and by preventing significant degradation of the future acoustic environment.	The Proposed Project would involve operation of equipment that would act as noise sources that could degrade the acoustic environment. Implementation of best management practices for construction noise and implementation of a helicopter noise control strategy would make the project consistent with this policy.	YES
Safety Element Policy 27: The City of Beaumont shall promote the effective enforcement of City, State and federal noise standards by all appropriate City divisions.	The Proposed Project would not affect the ability of the City of Beaumont to effectively enforce noise standards. The Proposed Project would not conflict with this policy.	YES
AIR QUALITY		
Resource Management Element, Page 50		
Resource Management Element Policy 9. The City of Beaumont will require feasible fugitive dust reduction techniques to be utilized during construction activities such as regularly watering down the construction area.	The Proposed Project would conform to this policy through the implementation of air quality mitigation measures.	YES
HYDROLOGY & WATER RESOURCES		
Resource Management Element, Page 50		
Resource Management Element Policy 6: The City of Beaumont will strive to promote development practices that will mitigate potential flooding.	The Proposed Project would conform to this policy through the implementation of mitigation measures, which provide flood control and prevention procedures.	YES
Safety Element, Safety Goals & Policies, Page 62		
Safety Element Policy 10: The City of Beaumont will require all new developments to mitigate potential flooding that may result from the development.	The Proposed Project would conform to this policy through the implementation of mitigation measures, which provide flood control and prevention procedures. Little impervious surface would be developed as part of the project.	YES
GEOLOGY, MINERAL RESOURCES, AND SOILS		
Safety Element, Safety Goals & Policies , Page 61		
Safety Element Policy 4: The City of Beaumont will require special soils and structural investigations for all proposed structures of large scale or involving large groups of people.	The Proposed Project would conform to this policy through the implementation of mitigation measures, which provide procedures for conducting soil and structural investigations.	YES

4.9 City of Banning, California

City of Banning General Plan, 2006. The City of Banning is a growing community in west-central Riverside County and is located in the San Gorgonio Pass area. The city's corporate limits cover about 23.2 square miles. The Proposed Project would include the upgrading of an existing SCE 220 kV transmission line within the City of Banning.

City of Banning General Plan, 2006		
Applicable Policies	**Determination**	**Consistent?**
BIOLOGICAL RESOURCES		
Environmental Resources, Open Space and Conservation Element, Page IV-26		
Policy 3: Ridgelines shall be preserved as open space	A majority of the Proposed Project would occur in an existing utility corridor such that ridgelines may not be affected. The ROW would remain as open space.	YES
Policy 4: The City shall preserve all watercourses and washes necessary for regional flood control, ground water recharge areas and drainage for open space and recreational purposes.	This policy establishes that the City preserves all watercourses and washes for regional flood control, open space, and recreational purposes. This policy does not relate to the Proposed Project directly. Project facilities would be located outside of hazard zones or be designed to withstand foreseeable hazards.	N/A
Policy 5: The City shall preserve permanent open space edges or greenbelts that define the physical limits of the City and provide physical separation between adjoining neighborhoods.	The Proposed Project would be located on existing utility corridors where open space ridges or greenbelts may not be affected.	YES
Biological Resources Element, Page IV-53		
Program 1.C: The City staff shall continue to request biological resource surveys for new development in compliance with applicable State and federal requirements.	The Proposed Project includes surveys of biological resources, and therefore would be consistent with this policy.	YES
Policy 2: As part of the development review process, the City shall evaluate projects based on their impact on existing habitat and wildlife, and for the land's value as viable open space.	The Proposed Project will be evaluated with regard to its impacts on biological resources, including habitat and wildlife. Therefore, the Proposed Project would be consistent with this policy.	YES
Policy 4. Drainage channels, utility corridors and pipeline easements shall be preserved in natural open space to the extent possible.	A majority of the Proposed Project would occur in existing utility corridor ROWs, which would preserve open space. Therefore, the Proposed Project would be consistent with this policy.	YES

City of Banning General Plan, 2006

Applicable Policies	Determination	Consistent?
LAND USE		
Community Development		
Goal: A balanced, well planned community including businesses which provides a functional pattern of land uses and enhances the quality of life for all Banning residents. **Goal:** Sufficient and appropriately located public facilities to serve the needs of the City's residents, businesses and visitors. **Program 21.A** Land use designation decisions within the area of influence of the airport shall be specifically reviewed to assure compatibility.	The Proposed Project components in the City of Banning include the 220 kV transmission lines and telecommunications facilities and the Hathaway 1 and Hathaway 2 staging yards. The existing WOD corridor is incorporated into the community's existing land use pattern. The proposed telecommunications improvements located outside the existing 220 kV transmission line ROW are associated with existing substations, and would be constructed primarily in existing public ROW. The Proposed Project would be consistent with the City's goal of maintaining a balanced community and a functional pattern of land use. The Proposed Project would facilitate the delivery of new renewable generation resources and reduce electric system congestion. The Proposed Project is consistent with the City's goal to locate public facilities that serve the needs of the local community. An approximately 3-mile segment of the 220 kV transmission lines located in Segment 5, including a portion on the Morongo Reservation, would be operating within new ROW. This new ROW would transect the FAR Part 77 Conical Surface Area for the Banning Airport. SCE would file the necessary FAA Form7460-1 for structures or lines as outlined in FAR Part 77 prior to Proposed Project construction, and FAA recommendations would be implemented into the design of the Proposed Project. Thus, the operation of the 220 kV transmission lines would not conflict with FAA regulations.	YES
VISUAL RESOURCES		
Community Development, Open Space and Conservation Goals, Policies and Programs, Page III-23		
Policy 3: The City of Banning shall protect the peaks and ridgelines within the City, and encourage coordination with adjacent jurisdictions to protect the peaks and ridgelines within the City's area of influence, to protect the historic visual quality of the hillside areas and natural features of the Pass area.	This policy describes the City's desire to protect scenic attributes as part of the City's project review process but does not specify criteria that projects must meet or actions that projects must consider or undertake to protect visual resources and/or minimize visual impacts.	YES

City of Banning General Plan, 2006

Applicable Policies	Determination	Consistent?
Land Use Element, Page III-23s and III-24-8		
Policy 3 – The City of Banning shall protect the peaks and ridgelines within the City, and encourage coordination with adjacent jurisdictions to protect the peaks and ridgelines within the City's area of influence, to protect the historic visual quality of hillside areas and natural features of the Pass area. Program 3.A – The City shall investigate and implement actions and regulations that facilitate hillside development that is compatible with the natural characteristics of the terrain while protecting the significant view sheds, and natural hillside features such as topography, natural drainage, vegetation, wildlife habitats, movement corridors etc.	Although the Proposed Project would not be consistent with the natural characteristics of the terrain, the Proposed Project would be located within an established utility corridor, which would avoid the proliferation of additional ROWs across natural landscapes. Also, the Proposed Project would improve the visual characteristics of the ROW and hillside environment by replacing three transmission lines of different design with two lines of the same design, thereby reducing the ROW's structural complexity, industrial character, and associated visual contrast. Therefore, the Proposed Project would be consistent with this policy.	YES
Public Services and Facilities, Water, Wastewater and Utilities Element, Page VI-8		
Policy 10: Major utility facilities, including power and other transmission towers, cellular communication towers and other viewshed intrusions shall be designed and sited to ensure minimal environmental and viewshed impacts and environmental hazards.	The proposed infrastructure upgrades would occur in existing utility corridor ROWs. Visual impacts of new or replacement towers will be considered in the environmental review; therefore the intent of this policy would be met.	YES
WILDERNESS AND RECREATION		
Open Space and Conservation Element, Chapter IV: Environmental Resources, Page IV-27		
Policy 6: Where practical, new development shall integrate pipeline, above- and under-ground utility corridors and other easements (including electric, cable and telephone distribution lines) into a functional open space network.	The Proposed Project would be constructed within an existing utility corridor that would continue to be available for open space and/or recreational development. The Proposed Project would not conflict with this policy.	YES
CULTURAL & PALEONTOLOGICAL RESOURCES		
Archaeological and Cultural Resources Element, Page IV-68		
Policy 1: The City shall exercise its responsibility to identify, document and evaluate archaeological, historical and cultural resources that may be affected by proposed development projects and other activities. Program 1.A: All new development proposals, except single family dwelling on existing lots of record, shall submit a records search for historic and cultural resources as part of the planning process. Program 1.B: Development or land use proposals which have the potential to disturb or destroy sensitive cultural resources shall be evaluated by a qualified professional and, if necessary, comprehensive Phase I studies and appropriate mitigation measures shall be incorporated into project approvals.	The Proposed Project would be consistent with this policy because an evaluation of cultural resources has been conducted as part of the EIR/EIS Proposed Project evaluation. The cultural resources evaluation is documented in this report.	YES
NOISE		
Noise Element, Goals, Policies, and Programs, Page V-54 ff		
Policy 1: The City shall protect noise-sensitive land uses, including residential neighborhoods, schools, hospitals, libraries, churches, resorts and community open space, from potentially significant sources of community noise.	The Proposed Project would involve development of a new noise source. Implementation of best management practices for construction noise and implementation of a helicopter noise control strategy would make the project consistent with this policy.	YES

City of Banning General Plan, 2006		
Applicable Policies	**Determination**	**Consistent?**
TRANSPORTATION AND TRAFFIC		
Community Development, Circulation Element,, Goals, Policies, and Programs, Page III-75		
Policy 6: The City shall maintain peak hour Level of Service C or better on all local intersections, except those on Ramsey Street and at I-10 interchanges, where Level of Service D or better shall be maintained.	The Proposed Project would result in temporary construction traffic. However, mitigation measures would reduce expected construction traffic impacts. The Proposed Project would not include significant operational traffic. Therefore, the Proposed Project would be consistent with this policy.	YES
Public Services and Facilities, Water, Wastewater and Utilities Element, Page VI-8		
Policy 9: Utility lines on scenic roadways and major streets shall have primary consideration for undergrounding.	No designated scenic roadways exist near the proposed aboveground utility corridor upgrades.	YES
PUBLIC HEALTH & SAFETY		
Environmental Hazards, Hazardous and Toxic Materials Element, Goals, Policies and Program, Page V-85		
Policy 3: The City shall thoroughly evaluate development proposals for lands directly adjacent to sites known to be contaminated with hazardous or toxic materials, traversed by natural gas transmission lines or fuel lines, or sites that use potentially hazardous or toxic materials.	Tower locations proximate to an existing gas line would be verified prior to construction. Fuel and petroleum pipelines are south of I-10. Adjacent contaminated sites are unlikely in the rural/undeveloped area.	YES
Policy 5: The City shall designate appropriate access routes to facilitate the transport of hazardous and toxic materials	Minimal hazardous or toxic material would be use for the Proposed Project. Handling of such material would be in conformance with state and federal requirements and the required hazardous materials management plan.	YES
HYDROLOGY & WATER RESOURCES		
Environmental Hazards, Flooding and Hydrology Element, , Goals, Policies, and Programs, Page V-37		
Policy 6: All new development shall be required to incorporate adequate flood mitigation measures, such as grading that prevents adverse drainage impacts to adjacent properties, onsite retention of runoff, and the adequate siting of structures located within flood plains.	The Proposed Project would conform to this policy through the implementation of mitigation measures that provide flood control and prevention procedures.	YES
GEOLOGY, MINERAL RESOURCES, AND SOILS		
Environmental Hazards, Geotechnical Element, Goals, Policies, and Programs, Page V-23		
Policy 3: Development in areas identified as being susceptible to slope instability shall be avoided unless adequately engineered to eliminate geotechnical hazards.	The Proposed Project would be located in low to no Slope Instability areas.	YES
Policy 5: The City shall coordinate and cooperate with public and quasi-public agencies to assure the continued functionality of major utility systems in the event of a major earthquake.	The Proposed Project would conform to this policy through the implementation of mitigation measures, which provide procedures to analyze, confirm, and avoid active fault locations.	YES

City of Banning General Plan, 2006		
Applicable Policies	**Determination**	**Consistent?**
SOCIOECONOMICS		
Community Development, Economic Development Element, Goals, Policies, and Programs, Page III-42		
Policy 3: Encourage and promote infill development in orderly and logical development patterns that decrease the costs, and increase the efficiency of new utilities, infrastructure, and public services.	The new and upgraded electric transmission lines and substation facilities are intended to provide adequate electrical distribution to meet existing and future demand. Therefore, the Proposed Project itself would be an infrastructure project designed to accommodate existing and planned development within the City of Banning. The Proposed Project would be in compliance with this policy.	YES
Policy 8: In order to maintain existing economic activities and attract new commercial and industrial development, the City shall assure the provision of adequate utilities, infrastructure, and other capital facilities.	The new and upgraded electric transmission lines and substation facilities are intended to provide adequate electrical distribution to meet existing and future demand. Therefore, the Proposed Project itself would be an infrastructure project designed to accommodate existing and planned development within the City of Banning. The Proposed Project would be in compliance with this policy a.	YES

Visual Resources

Appendix 10

Visual Resources

APPENDIX 10 – VISUAL RESOURCES

TABLE AP.10-1. SUMMARY OF KEY OBSERVATION POINT ANALYSES

VIEWPOINT		EXISTING VISUAL SETTING								LONG-TERM VISUAL CHANGE					CEQA IMPACT SIGNIFICANCE	
				Viewer Exposure												
Key Observation Point (KOP)	Description	Visual Quality	Viewer Concern	Visibility	Distance Zone	Number of Viewers	Duration of View	Overall Viewer Exposure	Overall Visual Sensitivity	Description of Visual Change	Visual Contrast	Project Dominance	View Blockage	Overall Visual Change	Before and After Mitigation	Mitigation Measure
SEGMENT 1																
KOP 1 Right-of-Way Crossing of Mission Road in Loma Linda Figures D.18-8A / 8B	View to the south from Mission Road, down the right-of-way (ROW) park that has been developed under portions of the transmission lines, in the City of Loma Linda. Latitude: 34° 3′ 23.44″ N Longitude: 117° 14′ 20.67″ W	Low to Moderate Foreground to middleground suburban electric utility corridor with substantial industrial character, containing developed park facilities within the ROW. Suburban residential areas border both sides of the ROW. Vegetation within, and adjacent to the corridor provides visual interest and color contrast but is dominated by the larger, complex industrial forms of the transmission structures.	High Although energy transmission infrastructure dominates foreground views from the park areas within the corridor, from adjacent residential neighborhoods, and from roads that are spanned by the ROW and adjacent to the park, viewers would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (background sky or ridgelines) an adverse visual change.	High	Foreground	Moderate	Extended	High	Moderate to High	The Project would result in the replacement of three existing transmission lines with two taller, double-circuit facilities of identical lattice structure design. The taller structures would cause increased skylining (extending above the horizon) and would appear more visually prominent. However, the reduction in the overall number and types of structures would reduce: (1) structural complexity within the ROW, (2) overall industrial character, and (3) view blockage of higher value landscape features.	Slightly Reduced	Co-Dominant	Slightly Reduced	Improved	BEFORE: Beneficial (Class IV) AFTER: Same	Measure VR-9a (Project Design) Measure VR-10a (Surface Treatment)
SEGMENT 2																
KOP 2 Canyon Vista Dr. and East Chase Canyon Lane in Colton Figures D.18-9A / 9B	View to the west toward the existing transmission lines along the ridgeline south of the residential development, from Canyon Vista Drive, just west of East Chase Canyon Lane, in the City of Colton. Latitude: 34° 2′ 10.49″ N Longitude: 117° 16′ 18.57″ W	Moderate Foreground residential landscape consisting of newer two-story, single-family residences with some established trees providing interesting color contrasts with red-tiled roofs. Backdropped by grass-covered rolling hills and ridgelines with monotone tan grasses, punctuated by prominent, structurally complex, lattice transmission structures that exhibit substantial skylining.	High Although energy transmission infrastructure features prominently in the foreground views from the residential neighborhood, residents would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (background sky or ridges) an adverse visual change.	High	Foreground	Low	Extended	Moderate to High	Moderate to High	The Project would result in the replacement of one of three existing transmission lines with taller, double-circuit lattice structures. The incrementally taller structures would cause slightly increased skylining (extending above the horizon). However, due to a lower positioning on the slope, the increase height and skylining would be less noticeable and structure prominence would appear similar to the existing conditions.	Low	Co-Dominant	Low	Low to Moderate	BEFORE: Less than Significant (Class III) AFTER: Same	Measure VR-9a (Project Design) Measure VR-10a (Surface Treatment)

APPENDIX 10 – VISUAL RESOURCES
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Key Observation Point (KOP)	Description	Visual Quality	Viewer Concern	Visibility	Distance Zone	Number of Viewers	Duration of View	Overall Viewer Exposure	Overall Visual Sensitivity	Description of Visual Change	Visual Contrast	Project Dominance	View Blockage	Overall Visual Change	Before and After Mitigation	Mitigation Measure
SEGMENT 3																
KOP 3 Pilgrim Road in San Timoteo Canyon Figures D.18-10A / 10B	View to the west toward the Project route, from Pilgrim Road, off of San Timoteo Canyon Road in San Timoteo Canyon. Latitude: 34° 1' 25.35" N Longitude: 117° 12' 56.91" W	**Moderate** Rural residential landscape of rolling grass-covered hills with minimal visual variety, and the prominent complex of vertical forms consisting of energy transmission infrastructure. Lattice structures blend effectively with background landforms but become noticeably more conspicuous where structure skylining occurs (structures extending above the horizon line).	**High** Although energy transmission infrastructure features prominently in the foreground landscape, residents would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (background sky or ridges) an adverse visual change.	High	Foreground	Low	Extended	Moderate to High	Moderate to High	The Project would result in the replacement of three existing transmission lines of different design and size with two taller, double-circuit facilities of identical lattice structure design. Due to lower positions on the hill slopes, the taller structures would not cause increased skylining and would not appear more visually prominent. Also, the reduction in the overall number and types of structures would reduce: (1) structural complexity within the ROW, (2) asynchronous spans, (3) overall industrial character, and (4) view blockage of higher value landscape features.	Reduced	Co-Dominant	Reduced	Improved	BEFORE: Beneficial (Class IV) AFTER: Same	Measure VR-9a (Project Design) Measure VR-10a (Surface Treatment)
KOP 4 Westbound San Timoteo Canyon Road Figures D.18-11A / 11B	View to the southwest toward the Project route, from westbound San Timoteo Canyon Road. Latitude: 33° 59' 11.52" N Longitude: 117° 8' 39.43" W	**Moderate** Open, panoramic views of the southern hills and ridgelines that define the southwest boundary of San Timoteo Canyon are available throughout much of the length of San Timoteo Canyon Road. The hills are primarily grass-covered and offer subdued coloration and minimal visual variety but are primarily natural in appearance. The notable exception is the substantial transmission line corridor containing three transmission lines that traverses the hills and ridges.	**High** Although energy transmission infrastructure features prominently in the foreground landscape, residents and travelers on San Timoteo Canyon Road would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (background sky or ridges) an adverse visual change.	High	Foreground	Low to Moderate	Extended	Moderate to High	Moderate to High	The Project would result in the replacement of three existing transmission lines of different design and size with two taller, double-circuit facilities of identical lattice structure design. Due to lower positions on the hill slopes, the taller structures would not cause increased skylining and would not appear more visually prominent. Also, the reduction in the overall number and types of structures would reduce: (1) structural complexity within the ROW, (2) asynchronous spans, (3) overall industrial character, and (4) view blockage of higher value landscape features.	Reduced	Co-Dominant	Reduced	Improved	BEFORE: Beneficial (Class IV) AFTER: Same	Measure VR-9a (Project Design) Measure VR-10a (Surface Treatment

APPENDIX 10 – VISUAL RESOURCES

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SEGMENT 4																
KOP 5 Boros Boulevard – Tukwet Canyon Figures D.18-12A / 12B	View to the northeast from the intersection of Boros Boulevard and Venturi Avenue, in the Tukwet Canyon residential development, at the eastern end of San Timoteo Canyon. Latitude: 33° 57′ 48.16″ N Longitude: 117° 3′ 30.34″ W	**Moderate** Foreground new suburban residential landscape of two-story single-family homes. Prominent (though partially screened) energy transmission infrastructure (structures and conductors) is adjacent and to the rear of the northern perimeter of the development. Generally lacking distinctive features or elements of visual interest.	**High** Although energy transmission infrastructure features prominently in the foreground of views from the adjacent neighborhood, residents would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (background ridges or sky) an adverse visual change.	High	Foreground	Low to Moderate	Extended	Moderate to High	Moderate to High	The Project would result in the replacement of three existing transmission lines of different design and size with two taller, double-circuit facilities of identical lattice structure design. The taller structures would be more visible to residents, and cause increased skylining (extending above the horizon), appearing more visually prominent. However, the reduction in the overall number and types of structures would reduce: (1) structural complexity within the ROW, (2) asynchronous spans, (3) overall industrial character, and (4) view blockage of higher value landscape features.	Low	Co-Dominant	Slightly Reduced	Low	BEFORE: Less than Significant (Class III) AFTER: Same	Measure VR-9a (Project Design) Measure VR-10a (Surface Treatment
KOP 6 Stetson Community Park in the City of Beaumont Figures D.18-13A / 13B	View to the northwest from the east end of Stetson Community Park, viewing down the park that has been developed within the ROW, in the City of Beaumont. Latitude: 33° 57′ 27.38″ N Longitude: 117° 0′ 46.86″ W	**Low to Moderate** Foreground to middleground suburban electric utility corridor with substantial industrial character, but hosting developed park facilities within the ROW. Suburban residential areas border both sides of the ROW. Vegetation within, and adjacent to the corridor provides color contrast but is dominated by the larger, complex industrial forms of the transmission structures.	**High** Although energy transmission infrastructure dominates foreground views from the park areas within the corridor, from adjacent residential neighborhoods, and from roads that are spanned by the ROW and adjacent to the park, viewers would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (background sky or ridgelines) an adverse visual change.	High	Foreground	Moderate	Extended	High	Moderate to High	The Project would result in the replacement of three existing transmission lines with two taller, double-circuit facilities of identical lattice structure design. The taller structures would cause increased skylining and would appear more visually prominent. However, from within and north of the ROW, the reduction in the overall number and types of structures would reduce: (1) structural complexity within the ROW, (2) asynchronous spans, (3) overall industrial character, and (4) view blockage of higher value landscape features. From south of the ROW, structures would appear more visually prominent	North of, Within, & Most Views South of ROW: Reduced Some Views South of ROW: Moderate Some Views South of ROW: High	Co-Dominant	North of, Within, & Most Views South of ROW: Reduced Some Views South of ROW: Low to Moderate Some Views South of ROW: Moderate to High	North of, Within, & Most Views South of ROW: Improved Some Views South of ROW: Moderate Some Views South of ROW: Moderate to High	North of, Within, & Most Views South of ROW: Beneficial (Class IV) Some Views South of ROW: Less than Significant (Class III) Some Views South of ROW: Significant (Class I)	Measure VR-9a (Project Design) Measure VR-10a (Surface Treatment

APPENDIX 10 – VISUAL RESOURCES
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VIEWPOINT		EXISTING VISUAL SETTING								LONG-TERM VISUAL CHANGE					CEQA IMPACT SIGNIFICANCE	
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Key Observation Point (KOP)	Description	Visual Quality	Viewer Concern	Visibility	Distance Zone	Number of Viewers	Duration of View	Overall Viewer Exposure	Overall Visual Sensitivity	Description of Visual Change	Visual Contrast	Project Dominance	View Blockage	Overall Visual Change	Before and After Mitigation	Mitigation Measure
SEGMENT 4 (cont'd)																
KOP 7 **Oak Valley Golf Course** **Figures D.18-14A / 14B**	View to the southeast toward the Project route, from the Solera Oakmont Clubhouse in the City of Beaumont. Latitude: 33° 57' 17.16" N Longitude: 116° 59' 58.28" W	**Moderate** Foreground, manicured landscape of grass and trees designed to provide open views and aesthetic appeal for recreational visitors. Adjacent residential developments are also visible. Prominent in views are the existing electric transmission facilities of various designs, which impart prominent industrial character.	**High** Visitors to the golf course and Clubhouse expect to see a landscape with high aesthetic appeal, characterized by a mosaic of natural and managed vegetative forms. Any additional intrusion of built structures with industrial character or blockage of views from any of the golf course grounds would be seen as an adverse visual change.	High	Foreground	Low to Moderate	Extended	Moderate to High	Moderate to High	The Project would result in the replacement of three existing transmission lines with two taller, double-circuit facilities of identical lattice structure design. The taller structures would cause increased skylining and would appear more visually prominent. However, from within and north of the ROW, the reduction in the overall number and types of structures would reduce: (1) structural complexity within the ROW, (2) asynchronous spans, (3) overall industrial character, and (4) view blockage of higher value landscape features. From south of the ROW, structures would appear more prominent	North of, Within, & Most Views South of ROW: Reduced Some Views South of ROW: Moderate Some Views South of ROW: High	Co-Dominant	North of, Within, & Most Views South of ROW: Reduced Some Views South of ROW: Low to Moderate Some Views South of ROW: Moderate to High	North of, Within, & Most Views South of ROW: Improved Some Views South of ROW: Moderate Some Views South of ROW: Moderate to High	North of, Within, & Most Views South of ROW: Beneficial (Class IV) Some Views South of ROW: Less than Significant (Class III) Some Views South of ROW: Significant (Class I)	Measure VR-9a (Project Design) Measure VR-10a (Surface Treatment
KOP 8 **Stargazer St. and Rose Ave. in The Estates Residential Development in the City of Beaumont** **Figures D.18-15A / 15B**	View to the east-southeast toward the Project route, from the intersection of Stargazer Street and Rose Avenue, one of the residential streets in The Estates subdivision, in the City of Beaumont. Latitude: 33° 57' 11.99" N Longitude: 116° 59' 29.43" W	**Moderate** Foreground suburban residential landscape of one-story single-family homes. Prominent (though partially screened) energy transmission infrastructure (towers and conductors) is adjacent and to the rear of the southern perimeter of the development. Generally lacking distinctive features or elements of visual interest.	**High** Although energy transmission infrastructure features prominently in the foreground of views from the adjacent neighborhood, residents would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (background sky) an adverse visual change.	High	Foreground	Low	Extended	Moderate to High	Moderate to High	The Project would result in the replacement of three existing transmission lines with two taller, double-circuit facilities of identical lattice structure design. The taller structures would cause increased skylining and would appear more visually prominent. However, from within and north of the ROW, the reduction in the overall number and types of structures would reduce: (1) structural complexity within the ROW, (2) asynchronous spans, (3) overall industrial character, and (4) view blockage of higher value landscape features. From south of the ROW, structures would appear more prominent	North of, Within, & Most Views South of ROW: Reduced Some Views South of ROW: Moderate Some Views South of ROW: High	Co-Dominant	North of, Within, & Most Views South of ROW: Reduced Some Views South of ROW: Low to Moderate Some Views South of ROW: Moderate to High	North of, Within, & Most Views South of ROW: Improved Some Views South of ROW: Moderate Some Views South of ROW: Moderate to High	North of, Within, & Most Views South of ROW: Beneficial (Class IV) Some Views South of ROW: Less than Significant (Class III) Some Views South of ROW: Significant (Class I)	Measure VR-9a (Project Design) Measure VR-10a (Surface Treatment

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VIEWPOINT		EXISTING VISUAL SETTING								LONG-TERM VISUAL CHANGE					CEQA IMPACT SIGNIFICANCE	
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Key Observation Point (KOP)	Description	Visual Quality	Viewer Concern	Visibility	Distance Zone	Number of Viewers	Duration of View	Overall Viewer Exposure	Overall Visual Sensitivity	Description of Visual Change	Visual Contrast	Project Dominance	View Blockage	Overall Visual Change	Before and After Mitigation	Mitigation Measure
SEGMENT 4 (cont'd)																
KOP 9 Cedar Hollow Road in Beaumont Figures D.18-16A / 16B	View to the southwest toward the Project in Segment 4 as it passes through the northern residential areas in the City of Beaumont. Latitude: 33° 57' 1.24" N Longitude: 116° 58' 1.56" W	**Low to Moderate** Foreground suburban residential landscape of one- and two-story single-family homes, dominated by an adjacent energy transmission corridor. Generally lacking distinctive features or elements of visual interest.	**High** Although energy transmission infrastructure features prominently in the foreground of views from the adjacent neighborhood, residents would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (background sky) an adverse visual change.	High	Foreground	Low	Extended	Moderate to High	Moderate to High	The Project would result in the replacement of three existing transmission lines with two taller, double-circuit facilities of identical lattice structure design. The taller structures would cause increased skylining and would appear more visually prominent. However, from within and north of the ROW, the reduction in the overall number and types of structures would reduce: (1) structural complexity within the ROW, (2) asynchronous spans, (3) overall industrial character, and (4) view blockage of higher value landscape features. From south of the ROW, structures would appear more prominent	North of, Within, & Most Views South of ROW: Reduced Some Views South of ROW: Moderate Some Views South of ROW: High	Co-Dominant	North of, Within, & Most Views South of ROW: Reduced Some Views South of ROW: Low to Moderate Some Views South of ROW: Moderate to High	North of, Within, & Most Views South of ROW: Improved Some Views South of ROW: Moderate Some Views South of ROW: Moderate to High	North of, Within, & Most Views South of ROW: Beneficial (Class IV) Some Views South of ROW: Less than Significant (Class III) Some Views South of ROW: Significant (Class I)	Measure VR-9a (Project Design) Measure VR-10a (Surface Treatment
SEGMENT 5																
KOP 10 Bluff Street in Banning Figures D.18-17A / 17B	View to the southeast toward the Project at the border of Segments 4 and 5, as the Project passes north of the City of Banning, extending to the east across Morongo tribal lands. Latitude: 33° 56' 54.75" N Longitude: 116° 52' 38.86" W	**Moderate** Semi-arid rural residential landscape with foreground grass- and shrub-covered hills and ridges with muted hues of tans and yellows with some darker contrasting greens from within residential yards. The background is dominated by Mount San Jacinto. Existing vertical forms of energy infrastructure (lattice and wood-pole structures) with industrial character feature prominently in the landscape, particularly where structure skylining occurs.	**High** Although energy transmission infrastructure features prominently in the foreground landscape at the base of the hills, travelers on Bluff Street and adjacent residents would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (background sky, hills, and mountains) an adverse visual change.	High	Foreground	Low	Extended	Moderate to High	Moderate to High	The Project would result in the replacement of three existing transmission lines of different design and size with two taller, double-circuit, TSPs of identical design. The TSPs would appear more massive and visibly more prominent at greater distance. However, the reduction in the overall number and types of structures would reduce visible structural complexity within the ROW.	Moderate	Co-Dominant	Moderate	Moderate	BEFORE: Less than Significant (Class III) AFTER: Same	Measure VR-9a (Project Design) Measure VR-10a (Surface Treatment

APPENDIX 10 – VISUAL RESOURCES
TABLE AP.10-1. SUMMARY OF KEY OBSERVATION POINT ANALYSES

VIEWPOINT		EXISTING VISUAL SETTING								LONG-TERM VISUAL CHANGE					CEQA IMPACT SIGNIFICANCE	
				Viewer Exposure												
Key Observation Point (KOP).	Description	Visual Quality	Viewer Concern	Visibility	Distance Zone	Number of Viewers	Duration of View	Overall Viewer Exposure	Overall Visual Sensitivity	Description of Visual Change	Visual Contrast	Project Dominance	View Blockage	Overall Visual Change	Before and After Mitigation	Mitigation Measure
SEGMENT 5 (cont'd)																
KOP 11 Hathaway Street in Banning Figures D.18-18A / 18B	View to the northeast toward the Project across the southwest corner of the Morongo Tribal Lands, from the entrance to the Summit Ridge Apartments on Hathaway Street, in eastern Banning. Latitude: 33° 55′ 54.44″ N Longitude: 116° 51′ 33.79″ W	**Low to Moderate** The foreground, disturbed and undeveloped, open landscape is generally lacking features of visual interest and exhibits minimal visual variety. Existing utility infrastructure further compromises views of the background San Bernardino Mountains, which do provide a backdrop of visual interest.	**High** Although the foreground landscape is highly disturbed and existing utility infrastructure is noticeable in views from Hathaway Street, travelers and adjacent residents would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (background sky, hills, and mountains) an adverse visual change.	High	Foreground	Low	Extended	Moderate to High	Moderate to High	The Project would result in the introduction of two double-circuit, TSP transmission lines into a foreground landscape presently absent similar features. The TSPs would appear as prominent, vertical structures that would result in moderate to high visual contrast. The TSPs would appear co-dominant in scale with the more distant background mountains. View blockage of the mountains and sky would be moderate to high.	Moderate to High	Co-Dominant	Moderate to High	Moderate to High	BEFORE: Significant and Un-Mitigable (Class I) AFTER: Same	Measure VR-9a (Project Design) Measure VR-10a (Surface Treatment
KOP 12 Morongo Community Center Figures D.18-19A / 19B	View to the southwest toward the Project route as it passes south of the Morongo Community Center at 13000 Fields Road, north of I-10. Latitude: 33° 56′ 7.46″ N Longitude: 116° 49′ 22.36″ W	**Low to Moderate** Foreground dominated by the flat arid landscape of San Gorgonio Pass with prominent energy transmission infrastructure (towers and conductors), paved parking surfaces, and I-10 immediately to the south, and backdropped by steeply rising ridges both to the north and south of the pass.	**High** Although energy transmission infrastructure features prominently in the foreground landscape when viewed from the community center, visitors to the community center would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (background sky, ridges, and Mount San Jacinto) an adverse visual change.	High	Foreground	Low to Moderate	Extended	Moderate to High	Moderate to High	The Project would result in the replacement of three existing transmission lines of different design and size in an existing corridor with two double-circuit TSPs of identical design in a new corridor. The TSPs would be similar in height to the tallest of the existing lattice structures, but they would appear somewhat more massive. They would also appear shorter but more numerous when viewed from the Community Center because the TSPs have shorter conductor spans requiring more structures (38 for the Project vs. 37 for the existing line).	Moderate	Co-Dominant	Moderate	Moderate	BEFORE: Less than Significant (Class III) AFTER: Same	Measure VR-9a (Project Design) Measure VR-10a (Surface Treatment

APPENDIX 10 – VISUAL RESOURCES
TABLE AP.10-1. SUMMARY OF KEY OBSERVATION POINT ANALYSES

VIEWPOINT		EXISTING VISUAL SETTING								LONG-TERM VISUAL CHANGE					CEQA IMPACT SIGNIFICANCE	
				Viewer Exposure												
Key Observation Point (KOP)	Description	Visual Quality	Viewer Concern	Visibility	Distance Zone	Number of Viewers	Duration of View	Overall Viewer Exposure	Overall Visual Sensitivity	Description of Visual Change	Visual Contrast	Project Dominance	View Blockage	Overall Visual Change	Before and After Mitigation	Mitigation Measure
SEGMENT 6																
KOP 13 Haugen-Lehmann Way in the Central Portion of the Community of Whitewater Figures D.18-20A / 20B	View to the west toward the Project route, from Haugen-Lehmann Way, near the intersection with Amethyst Drive, in the community of Whitewater. Latitude: 33° 55′ 49.53″ N Longitude: 116° 41′ 25.92″ W	**Low to Moderate** Foreground rural residential desert landscape dominated by the vertical forms of utility poles and electric transmission line structures, and backdropped by a low range of rolling hills and angular ridges with muted earth-tone colors.	**High** Although energy transmission infrastructure features prominently in the landscape visible within this community, residential viewers would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (background sky, ridges, or Mount San Jacinto if viewing to the south) an adverse visual change.	High	Foreground	Low	Extended	Moderate to High	Moderate to High	The Project would result in the replacement of three existing transmission lines of different design and size with two taller, double-circuit facilities of identical lattice structure design. The taller structures would cause increased skylining (extending above the horizon) and would appear more visually prominent. However, the reduction in the overall number and types of structures would reduce: (1) structural complexity within the ROW, (2) asynchronous spans, (3) overall industrial character, and (4) view blockage of higher value landscape features.	Reduced	Co-Dominant	Reduced	Improved	BEFORE: Beneficial (Class IV) AFTER: Same	Measure VR-9a (Project Design) Measure VR-10a (Surface Treatment
KOP 14 Pacific Crest Trail Trailhead / Parking Lot Figures D.18-21A / 21B	View to the south toward the Project route passing through the western portion of the community of Whitewater, from the Pacific Crest Trail (PCT) Parking Lot, north of Haugen-Lehmann Way. Latitude: 33° 56′ 48.80″ N Longitude: 116° 41′ 33.54″ W	**Moderate to High** Foreground features consist of a, flat desert landscape of low-growing grasses and shrubs of muted colors, the western portion of the rural residential community of Whitewater, and existing built energy infrastructure including transmission lines and wind turbines. The dominant feature in the landscape is the background, rugged, angular and massive landform of Mount San Jacinto, rising abruptly from the desert plain.	**High** Although energy infrastructure features prominently in the western San Gorgonio Pass landscape visible from the PCT and parking lot, trail users would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (background sky, ridges, or Mount San Jacinto) an adverse visual change.	Moderate to High	Foreground	Low	Extended	Moderate to High	Moderate to High	The Project would result in the replacement of three existing transmission lines of different design and size with two taller, double-circuit facilities of identical lattice structure design. The new structures would be more noticeable from the PCT due to their greater heights and light gray color, compared to the more weathered, darker-colored structures of the existing lines. However, there would be a reduction in the number and types of structures, which would slightly reduce visible structural complexity, and asynchronous conductor spans.	Low	Subordinate	Low (and similar to the existing facilities)	Low	BEFORE: Less than Significant (Class III) AFTER: Same	Measure VR-9a (Project Design) Measure VR-10a (Surface Treatment

APPENDIX 10 – VISUAL RESOURCES
TABLE AP.10-1. SUMMARY OF KEY OBSERVATION POINT ANALYSES

VIEWPOINT		EXISTING VISUAL SETTING								LONG-TERM VISUAL CHANGE					CEQA IMPACT SIGNIFICANCE	
				Viewer Exposure												
Key Observation Point (KOP)	Description	Visual Quality	Viewer Concern	Visibility	Distance Zone	Number of Viewers	Duration of View	Overall Viewer Exposure	Overall Visual Sensitivity	Description of Visual Change	Visual Contrast	Project Dominance	View Blockage	Overall Visual Change	Before and After Mitigation	Mitigation Measure
SEGMENT 6 (cont'd)																
KOP 15 Whitewater Canyon Road, South of Bonnie Bell Figures D.18-22A / 22B	View to the southeast toward the Project route, at the east rim of Whitewater Canyon, from Whitewater Canyon Road, south of Bonnie Bell. Latitude: 33° 56' 16.75" N Longitude: 116° 38' 29.98" W	Moderate Foreground desert river canyon landscape defined by low canyon walls and the vertical, industrial forms of wind turbines and electric transmission structures, backdropped by the massive angular form of Mount San Jacinto, rising dramatically from the flat desert floor.	High Travelers on Whitewater Canyon Road, including residents from the nearby residential enclave of Bonnie Bell, would consider any increase in industrial character or built structural prominence in the canyon, or view blockage of the background sky and Mount San Jacinto an adverse visual change.	High	Foreground	Low to Moderate	Moderate to Extended	Moderate to High	Moderate to High	The Project would result in the replacement of three existing transmission lines of different design and size with two taller, double-circuit facilities of identical lattice structure design. The taller structures would cause increased skylining (extending above the horizon) and would appear slightly more visually prominent to travelers on Whitewater Canyon Road. However, there would be a reduction in the number and types of structures, which would slightly reduce visible structural complexity, and asynchronous conductor spans.	Low	Co-Dominant	Low (and similar to the existing facilities)	Low	BEFORE: Less than Significant (Class III) AFTER: Same	Measure VR-9a (Project Design) Measure VR-10a (Surface Treatment)
KOP 16 Painted Hills Road in the Community of Whitewater Figures D.18-23A / 23B	View to the south-southeast toward the Project at the eastern end of Segment 6, from Painted Hills Road, immediately east of Verbena, in the eastern portion of the Community of Whitewater, immediately west of SR 62. Latitude: 33° 56' 6.08" N Longitude: 116° 36' 33.57" W	Low to Moderate Foreground to middleground flat, desert landscape of grasses and low shrubs of muted tones, dominated by a profusion of energy infrastructure consisting of the predominantly vertical forms of wind turbines and electric transmission line structures. A background of distant hills and mountains low on the horizon adds visual interest. Mount San Jacinto is the dominant natural feature in the region.	High Residential viewers in this portion of Whitewater would consider any increase in industrial character, structure prominence, or view blockage of higher value landscape features (background sky, ridges, and Mount San Jacinto) an adverse visual change.	High	Foreground	Low	Extended	Moderate to High	Moderate to High	The Project would result in the replacement of three existing transmission lines of different design and size with two taller, double-circuit facilities of identical lattice structure design. The taller structures would appear slightly more visually prominent due to the greater structural heights. However, the overall structural complexity within the ROW would be slightly reduced, though it would not be readily apparent given the existing structural complexity of the background and adjacent landscape.	Low	Co-Dominant	Low	Low to Moderate	BEFORE: Less than Significant (Class III) AFTER: Same	Measure VR-9a (Project Design) Measure VR-10a (Surface Treatment)

APPENDIX 10 – VISUAL RESOURCES
TABLE AP.10-1. SUMMARY OF KEY OBSERVATION POINT ANALYSES

VIEWPOINT		EXISTING VISUAL SETTING								LONG-TERM VISUAL CHANGE					CEQA IMPACT SIGNIFICANCE	
				Viewer Exposure												
Key Observation Point (KOP)	Description	Visual Quality	Viewer Concern	Visibility	Distance Zone	Number of Viewers	Duration of View	Overall Viewer Exposure	Overall Visual Sensitivity	Description of Visual Change	Visual Contrast	Project Dominance	View Blockage	Overall Visual Change	Before and After Mitigation	Mitigation Measure
SEGMENT 6 (cont'd)																
KOP 17 Southbound State Route 62 Scenic Hwy. Figures D.18-24A / 24B	View to the southeast toward the Project span of SR 62, from southbound SR 62, just north of the span. Latitude: 33° 56' 15.64" N Longitude: 116° 35' 50.56" W	Low to Moderate Foreground to middleground flat, desert landform dominated by a profusion of energy infrastructure consisting of the predominantly vertical forms of wind turbines and electric transmission line structures. This industrial-appearing landscape is backdropped by Mount San Jacinto, rising dramatically from the desert floor.	High SR 62 is an Officially Designated State Scenic Highway and therefore warrants a high rating for viewer concern. Although travelers on this stretch of SR 62 would not likely notice the change in conductors and structure configurations given the existing structural context, any perceived increase in industrial character, structure prominence, or view blockage would be experienced as an adverse visual impact.	High	Foreground	High	Moderate to Extended	High	Moderate to High	The Project would result in the replacement of three existing transmission lines of different design and size with two taller, double-circuit facilities of identical lattice structure design. While there would be a reduction in the structural complexity in the ROW, the taller structures would appear slightly more visually prominent and would cause slightly greater view blockage of higher quality background features. Also, because the Project conductor span distances would be shorter along this portion of Segment 6, the number of structures would be the same.	Low	Co-Dominant	Low to Moderate	Low to Moderate	BEFORE: Less than Significant (Class III) AFTER: Same	Measure VR-9a (Project Design) Measure VR-10a (Surface Treatment)
Subtransmission Route – Segment 1																
KOP 18 Northbound Iowa Street in the City of Redlands Figures D.18-25A / 25B	View to the north along the Iowa Street, near the southwest corner of the Cottage Lane residential subdivision, south of Orange Avenue and North of Barton Road. Latitude: 34° 3' 1.10" N Longitude: 117° 12' 46.93" W	Moderate Foreground suburban landscape, consisting of one- and two-story single-family homes, undeveloped land, and some commercial development. There is no prominent energy transmission infrastructure (structures and conductors) though there are a very few vertical light poles.	High Travelers on Iowa Street and adjacent residents would consider the introduction of prominent energy infrastructure with its associated industrial character and view blockage of higher value landscape features (background sky and mountains) an adverse visual change.	High	Foreground	Low to Moderate	Moderate to Extended	Moderate to High	Moderate to High	The Project would result in the introduction of a light-weight steel (LWS) pole 66 kV subtransmission line into a foreground residential suburban landscape presently absent similar features. The LWS poles would appear as prominent, vertical structures along the east side of Iowa Street, adjacent to the Cottage Lane residential subdivision. The resulting visual contrast would be moderate to high and the LWS poles would appear co-dominant in scale with the more distant background mountains. View blockage of the mountains and sky would be Moderate to High.	Moderate to High	Co-Dominant	Moderate to High	Moderate to High	BEFORE: Significant and Un-Mitigable (Class I) AFTER: Same	Measure VR-9a (Project Design) Measure VR-10a (Surface Treatment)

APPENDIX 10 – VISUAL RESOURCES

TABLE AP.10-2. EXPLANATION OF VISUAL SENSITIVITY (VS) –VISUAL CHANGE (VC) SUMMARY TABLE

(SEE TABLE AP.10-1 FOR COMPLETED SUMMARY TABLE)

VIEWPOINT		EXISTING VISUAL SETTING								VISUAL CHANGE					IMPACT SIGNIFICANCE	
				Viewer Exposure												
Key Observation Point (KOP)	Description	Visual Quality	Viewer Concern	Visibility	Distance Zone	Number of Viewers	Duration of View	Overall Viewer Exposure	Overall Visual Sensitivity	Description of Visual Change	Visual Contrast	Project Dominance	View Blockage	Overall Visual Change	Before Mitigation After Mitigation	Mitigation
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17

1. **Key Observation Point (KOP).** The key observation point column identifies: (a) the KOP number, (b) the KOP name, (c) whether the KOP is for the Proposed Project or an Alternative, and (d) the figure(s) that correspond to the KOP.

2. **Description.** The description column describes the location of the KOP and direction of view with reference to roads or other landmarks.

3. **Visual Quality.** Visual Quality describes the quality of the existing landscape and can be rated from Low to High. Visual Quality is one of three equally weighted contributing factors (along with Viewer Concern [Column 4] and Viewer Exposure [Column 9]) to assess overall Visual Sensitivity (Column 10). While the assessment of Visual Quality considers several factors, ultimately, the rating is determined by analyst judgment.

4. **Viewer Concern.** Viewer Concern is assigned a rating hierarchy similar to visual quality (Low to High) and is based on any known information about the viewing population, existing land uses, and plan or policy designations that might indicate public importance. Ultimately, the rating is determined by analyst judgment.

5. **Visibility.** Visibility is one of four factors contributing to the overall assessment of viewer exposure. As for Visual Quality, Visibility is rated Low to High. Visibility is determined by analyst judgment based on field evaluation of viewing proximity, visible detail, seasonal variations, air quality, lighting, and presence or absence of screening features (land and vegetation).

6. **Distance Zone.** Distance Zone is the second of four factors contributing to the overall assessment of viewer exposure and is assigned one of three ratings (Foreground, Middleground, or Background). The determination of the Distance Zone (the distance from a KOP to a project) is determined by map analysis.

7. **Number of Viewers.** Number of Viewers is the third of four factors contributing to the overall assessment of Viewer Exposure and can range from Low to High. Number of Viewers is generally a qualitative assessment made by the analyst, though it can draw from quantitative data such as traffic or use data for roads and highways, rivers and trails, and recreation sites. It also includes field observations and a general understanding of potential residential viewers.

8. **Duration of View.** Duration of View is the fourth of four equally weighted factors contributing to the overall assessment of Viewer Exposure. The Duration of View is a qualitative assessment made by the analyst and essentially denotes the relative length of the viewing experience (rated from Brief to Extended).

9. **Overall Viewer Exposure.** Overall Viewer Exposure is a summation of the four contributing and equally weighted factors of Visibility, Distance Zone, Number of Viewers, and Duration of View. The determination is based on analyst judgment. It is intuitive that if all contributing factors are rated highly, the summation will also be rated highly. It is similarly true if all four inputs are moderate or all four are low. However, analyst experience becomes key when the inputs are mixed values. Overall Viewer Exposure is rated Low to High.

10. **Overall Visual Sensitivity.** Overall Visual Sensitivity is a summation of the three contributing and equally weighted factors of Visual Quality, Viewer Concern, and Overall Viewer Exposure. The determination is based on analyst judgment. As with Overall Viewer Exposure, it is intuitive that if all contributing factors are rated highly, the summation will also be rated highly. It is similarly true if all three inputs are moderate or all three are low. However, analyst experience becomes key when the inputs are mixed values. Overall Visual Sensitivity is rated Low to High.

11. **Description of Visual Change.** This column provides a brief description of the change that would be caused by a project or action. It may include a description of the components contributing to the change, as well as the effects on the existing landscape. Often, the description will refer to Visual Contrast (Column 12), Project Dominance (Column 13), and/or View Blockage (Column 14)—the three factors contributing to Overall Visual Change (Column 15). The format is typically a narrative of the ratings identified in Columns 12, 13, and 14.

12. **Visual Contrast.** Visual Contrast is the first of three, equally weighted factors contributing to the overall assessment of Visual Change (Column 15) and is rated Low to High. Visual Contrast is a qualitative assessment made by the analyst and describes the degree to which a project's visual characteristics differ from those established in the existing landscape.

13. **Project Dominance.** Project Dominance is the second of three factors contributing to the assessment of Overall Visual Change (Column 15) and is rated Subordinate to Dominant. Project Dominance is a qualitative assessment made by the analyst and is a measure of a feature's apparent size relative to other visible landscape features and the total field of view.

14. **View Blockage.** View Blockage is the third of three factors contributing to the assessment of Overall Visual Change (Column 15) and is rated from Low to High. View blockage is a qualitative assessment made by the analyst and describes the extent to which any previously visible landscape features are either blocked from view or the views of those features are in some way impaired, as a result of the project's scale and/or position.

15. **Overall Visual Change.** This is a summation of the three contributing and equally weighted factors of Visual Contrast, Project Dominance, and View Blockage. The determination is based on analyst judgment. As with Overall Visual Sensitivity, it is intuitive that if all contributing factors are rated highly, the summation will also be rated highly. It is similarly true if all three inputs are moderate or all three are low. However, analyst experience becomes key when the inputs are mixed values. In some cases, for example where View Blockage is reduced, Overall Visual Change may be Improved

16. **Impact Significance Before/After Mitigation.** This column identifies impact significance (as a function of Overall Visual Sensitivity and Overall Visual Change). This determination is based on analyst judgment, though Table D.18-10 does illustrate the general interrelationships between Overall Visual Sensitivity ratings and Overall Visual Change ratings. Impact significance after mitigation is also presented in this column.

17. **Mitigation Measures.** This column lists any mitigation measures that have been identified (in the text) as applicable to the impact.

SOURCE OF COLUMN DATA

Column

1. Analyst assigned
2. Analyst determination
3. Analyst determination
4. Analyst determination
5. Analyst determination
6. Analyst determination
7. Analyst determination
8. Analyst determination
9. 5 + 6 + 7 + 8 + Analyst Interpretation
10. 3 + 4 + 9 + Analyst Interpretation
11. Analyst determination
12. Analyst determination
13. Analyst determination
14. Analyst determination
15. 12 + 13 + 14 + Analyst Interpretation
16. 10 + 15 + Analyst Interpretation
17. Determination based on analysis

Appendix 11. EIR/EIS
Information Contacts

Appendix 11

EIR/EIS Information Contacts

Appendix 11
EIR/EIS Information Contacts

Table Ap.11-1 lists the people who were contacted and consulted during the preparation of this document and in what section their information was used.

Table Ap.11-1. EIR/EIS Information Contacts

Agency/Organization	Name and Title	Information Used In
City of Redlands	Don Young, Engineering Manager	Alternatives
California Department of Fish and Wildlife/ Inland Deserts Region	Chris Allen, Environmental Scientist	Biological Resources
California Department of Fish and Wildlife/ Inland Deserts Region	Heather Pert, Environmental Scientist	Biological Resources
California Department of Fish and Wildlife/ Inland Deserts Region	Magdalena Rodriguez, Renewable Energy Program Environmental Scientist	Biological Resources
California Department of Fish and Wildlife/ South Coast Region	Eric Weiss, Environmental Scientist	Biological Resources
CAL FIRE/ Riverside Fire Department	Lisa Nottingham, Plan Checker	Wildland Fire
CAL FIRE/ Fire and Resource Assessment Program	Kelly Larvie, Research Analyst	Wildland Fire
U.S. Bureau of Land Management	James Gannon, Fuels Specialist	Wildland Fire
U.S. Bureau of Land Management	Greg Hill, Outdoor Recreation Specialist	Visual Resources
U.S. Bureau of Land Management	Kim Marsden, Natural Resource Specialist	Biological Resources
U.S. Fish and Wildlife Service/ Palm Springs Field Office	Karin Cleary-Rose, Chief, San Bernardino and Riverside Counties	Biological Resources
U.S. Fish and Wildlife Service/ Carlsbad Fish and Wildlife Office	Thomas Dietsch, Migratory Bird Biologist	Biological Resources
U.S. Fish and Wildlife Service/ Palm Springs Field Office	Felicia Sirchia, Biologist	Biological Resources

Appendix 12.
Preparers and Reviewers

Appendix 12

Preparers and Reveiwers

Appendix 12
Preparers and Reviewers

A consultant team led by Aspen Environmental Group prepared this document under the direction of the California Public Utilities Commission (CPUC) and the U.S. Bureau of Land Management (BLM). Table Ap.12-1 presents the agency preparers and technical reviewers of this document and their qualifications; Table Ap.12-2 presents the preparers from the Aspen consultant team.

Table Ap.12-1. Agency Preparers and Reviewers

Agency/Office	Personnel by Name and Title	Issue Area
CPUC		
California Public Utilities Commission	Billie Blanchard Project Manager	CPUC Project Manager
BLM		
Palm Springs/South Coast Field Office	John Kalish	Field Manager
	Frank McMenimen	EIS Project Manager
	George Kline Archaeologist	Cultural Resources, Tribal Consultation
California Desert District Office	John Dalton, Planning and Environmental Coordinator	NEPA Coordinator
	Tiffany Arend, Archaeologist	Cultural Resources, Tribal Consultation
	Kim Marsden, Natural Resource Specialist	Biological Resources
State Office	Elizabeth Meyer-Shields, Planning and Environmental Coordinator	NEPA and Planning
	David Fuller Environmental Protection Specialist	NEPA and Planning

Table Ap.12-2. Aspen Team Preparers

Firm	Personnel by Name and Title	Education	Years Exp.	Issue Area
Aspen Environmental Group	Susan V. Lee	M.S. Applied Earth Science B.A. Geology	31	EIR/EIS Project Manager
	Hedy Koczwara	M.S. Earth Systems B.S. Earth Systems	13	EIR/EIS Deputy Project Manager, project description, alternatives, and executive summary
	Brewster Birdsall	MS, Civil Engineering, BS, Mechanical Engineering	19	Coordinator for transmission planning and engineering alternatives. Alternatives Screening Report, Air Quality, Climate Change, Noise
	Emily Capello	M.P.A. Environmental Science and Policy B.A. History and English	13	Cumulative scenario, Recreation

Table Ap.12-2. Aspen Team Preparers

Firm	Personnel by Name and Title	Education	Years Exp.	Issue Area
	Fritts Golden	M.R.P Regional Planning B.A. Biology	39	Wildland Fire, Traffic &Transportation, Socioeconomics & Environmental Justice
	Matthew Long	Master of Environmental Science Master of Public Policy B.A. Comparative Literature	8	Cumulative analysis and management support
	Philip Lowe	M.S. Watershed Management B.S. Wildlife Management	36	Hydrology and Water Resources
	Amy Morris	Ph.D. Environmental Studies M.A. Environmental Studies B.A. Environmental Biology	15	Land Use Agricultural Resources
	Carla Wakeman	M.A. Biology B.A. Biology	25	Biological Resources
	Scott White	M.A. Biology B.A. Biology	28	Biological Resources
Applied Earthworks	Susan Goldberg	M.A. Anthropology B.A. Anthropology	37	Cultural Resources
	Joan George	B.S. Physical Anthropology	18	Cultural Resources
	Jessica DeBusk	B.S. Geology	12	Paleontological Resources
	Heather Clifford	M.S. Geology	4	Paleontological Resources
Forester's Co-Op	Tom Amesbury, RPF Registered Professional Forester	B.S. Forestry	36	Wildfire and Fuels Hazards
	Christian Eggleton	M.S. City Regional Planning,	5	Wildfire and Fuels Hazards
Granite Data Solutions	James E. Thurber, PG, CEG, CHg	M.S. and B.S. Geology B.A. Geography	30	Public Health and Safety
	Aurie C. Patterson, PG	B.A. Geology	21	Geology, Mineral Resources, and Soils
Michael Clayton Associates	Michael Clayton	M.S. Environmental Mgt. M.A. Asia Pacific Environmental Affairs B.A. Biology	30	Visual Resources
PhaseLine LLC	Charles H. Williams	B.S. Civil Engineering	36	Transmission Line and Substation – Alternatives, Engineering Feasibility, Construction Methods, Electric and Magnetic Fields
ZGlobal, Inc.	Gary Brown, P.E.	B.S. Electrical Engineering Masters – Technology Management	35	Transmission System Alternatives - Power Flow Analysis
	Nisar Shah, P.E.	B.S. Electrical Engineering M.S. Electrical Engineering	35	Transmission System Alternatives - Power Flow Analysis
	Marco Salazar, P.E.	B.S. Electrical Engineering	5	Transmission System Alternatives - Power Flow Analysis

Appendix 13.
Recipients of the EIR/EIS

Appendix 13

Recipients of the EIR/EIS

Appendix 13
Recipients of the EIR/EIS

Reference Librarian
A.K. Smiley Public Library
125 West Vine St
Redlands CA 92373

Reference Librarian
Beaumont Library District
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1400 Tenth St Rm 212
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974 Calimesa Blvd
Calimesa CA 92320

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City of Banning Public Library
21 W Nicolet St
Banning CA 92220

Reference Librarian
City of Colton Public Library
656 N Ninth St
Colton CA 92324

Reference Librarian
City of Grand Terrace Library
22795 Barton Rd
Grand Terrace CA 92313

Reference Librarian
City of Loma Linda Library
25581 Barton Rd
Loma Linda CA 92354

Reference Librarian
City of Riverside Library
3581 Mission Inn Ave
Riverside CA 92501

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4340 Redwood Hwy Ste E352
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1870 Mentone Blvd
Mentone CA 92359

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12700 Pumarra Rd
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Morongo Community Library
11581 Potrero Rd
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